

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Melvin S. MOGIL

Art Unit:

Serial No.:

Examiner:

Filed: May 18, 2001

Attorney Dkt. No. 100570-00018

For: DIVIDED INSULATED CONTAINER

**PRELIMINARY AMENDMENT**

Commissioner for Patents  
Washington, D.C. 20231

May 18, 2001

Sir:

The present Amendment is filed contemporaneously with the filing of a continuation of U.S. Patent Application Serial No. 09/323,202. Please amend the above-identified application as follows:

**IN THE SPECIFICATION:**

Please substitute the attached substitute specification for the originally-filed specification. A copy of the marked-up original specification is attached to this Amendment showing the changes, as required by amended 37 C.F.R. §1.121.

**IN THE DRAWINGS:**

Attached hereto is a Request for Approval of Drawing Corrections with proposed changes to Figures 1, 2, 4, 5, 6, 9, 12, 13, 14, 15, 18, 24 and 25, highlighted in red. These changes correct minor informalities. Formal drawings are being filed concurrently.

**IN THE CLAIMS:**

Please cancel claims 3, and 5 - 18 without prejudice or disclaimer.

Please amend claims 1 and 2 as indicated herein below. A copy of the marked-up claims 1 and 2 is attached to this Amendment showing the changes, as required by amended 37 C.F.R. §1.121.

1. (Amended) A soft sided, collapsible, insulated container comprising:
  - a first collapsible insulated container portion, a second collapsible insulated container portion and a common wall shared between said first and second container portions;
  - said first container portion having a first insulated wall structure defining a first enclosed chamber therewithin;
  - said first insulated wall structure having a first opening defined therein for providing access to said first enclosed chamber, a portion of said first insulated wall structure being moveable to close said first opening;
  - said second container portion having a second insulated wall structure defining a second enclosed chamber therewithin;
  - said common wall segregating said first and second enclosed chambers from each other;
  - said first chamber being maintainable at a different environmental condition from the environmental condition of said second chamber.
2. (Amended) The soft-sided, collapsible insulated container of claim 1 wherein said first container portion has a liner for containing liquids mounted within its respective chamber.

Please add new claims 19 to 44:

19. (New) The soft sided, collapsible insulated container of claim 1 wherein:
  - said first insulated wall structure has a rectangular base and rectangular sides extending upwardly from said rectangular base;
  - each of said rectangular sides having an upper margin and a lower margin;
  - said moveable portion of said first insulated wall structure is a top panel hingedly attached to said upper margin of one of said rectangular sides.

20. (New) The soft sided, collapsible insulated container of claim 19 wherein said top panel is a lid and said lid is moveable between an open position and a closed position relative to said first opening.
21. (New) The soft sided, collapsible insulated container of claim 20 further comprising a closure member mounted to said lid; said closure member being operable to secure said lid in said closed position.
22. (New) The soft sided, collapsible insulated container of claim 21 wherein said closure member is a tracked closure member.
23. (New) The soft sided, collapsible insulated container of claim 1 wherein said common wall includes a thermally insulative layer for discouraging heat transfer through said common wall.
24. (New) The soft-sided, collapsible insulated container of claim 1 wherein said second insulated wall structure has a second opening defined therein for providing access to said second enclosed chamber, a portion of said second insulated wall structure being moveable to close said second opening.
25. (New) The soft-sided, collapsible insulated container of claim 24 wherein:  
said common wall is a fixed rectangular wall having an upper margin and a lower margin; and  
at least one of said moveable portions of said first and second insulated wall structures is a top panel hingedly connected to said upper margin of said common wall.
26. (New) The soft-sided, collapsible insulated container of claim 25 wherein:  
said moveable portion of said first insulated container is a first top panel hingedly connected to said upper margin of said common wall; said first top panel

being moveable between an open position and a closed position relative to said first opening; and

said moveable portion of said second insulated container is a second top panel hingedly connected to said upper margin of said common wall; said second top panel being moveable between an open position and a closed position relative to said second opening;

said first and second top panels being opposed to each other when in their respective open positions.

27. (New) The soft-sided, collapsible insulated container of claim 26 wherein each of said first and second top panels has a closure member mounted thereto; said closure member being operable to secure each of said first and second top panels in its respective closed position.

28. (New) The soft sided, collapsible insulated container of claim 1 wherein said first container portion is moveable between an expanded position and a collapsed position relative to said common wall.

29. (New) The soft-sided, collapsible insulated container of claim 28 wherein:  
said first insulated wall structure has a rectangular base, a pair of opposing rectangular side panels and a rectangular end panel opposite said common wall; and  
said end panel is collapsible toward said common wall when said first container portion is moved from said expanded position to said collapsed position.

30. (New) The soft-sided, collapsible insulated container of claim 29 wherein:  
said common wall is a fixed rectangular wall having an upper margin and a lower margin;  
said moveable portion of said first insulated wall structure is a top panel hingedly connected to said upper margin of said common wall; and

said top panel is folded over said end panel when said first container portion is in said collapsed position.

31. (New) The soft-sided, collapsible insulated container of claim 30 wherein:

each of said top and end panels has an inner face oriented toward opposite said first enclosed chamber, and an outer face oriented away from said first enclosed chamber; and

said inner face of said top panel is releasably attachable to said outer face of said end panel when said first container portion is in said collapsed position.

32. (New) The soft sided, collapsible insulated container of claim 28 wherein:

said container has releasable fasteners mounted thereto for engaging said first container portion; and

said releasable fasteners are operable to retain said first container portion in said collapsed position.

33. (New) The soft sided, collapsible insulated container of claim 32 wherein said releasable fasteners are hook and eye fabric fasteners.

34. (New) The soft-sided, collapsible insulated container of claim 2 wherein said liner is releasably attached to said first insulated wall structure.

35. (New) The soft-sided, collapsible insulated container of claim 34 wherein said first container portion has liner securing means operable to attach said liner to said first insulated wall structure.

36. (New) The soft-sided, collapsible insulated container of claim 34 wherein said first opening has a lip, and said liner is mated to said first insulated wall structure about said lip.

37. (New) The soft-sided, collapsible insulated container of claim 34 wherein:  
said first insulated wall structure has a rectangular base and rectangular sides  
extending upwardly from said rectangular base;  
each of said rectangular sides meets said base at a lower edge;  
each of said rectangular sides has an upper edge distant from said base, said  
upper edges of said sides co-operating to define a rim; and  
said liner is releasably attached to said first insulated wall structure about said  
rim.
38. (New) The soft-sided, collapsible insulated container of claim 2 wherein:  
said liner has a base and sides folded from a monolithic sheet of liner stock;  
said monolithic sheet is a water impermeable plastic sheet; and  
said liner is free of heat welded seams.
39. (New) The soft-sided, collapsible insulated container of claim 2 wherein:  
said liner is formed from a monolithic sheet of liner stock;  
said liner has a base and four sides folded upwardly from said base;  
said liner has four corner portions folded to form flaps; and  
said flaps are folded to lie against said sides.
40. (New) The soft-sided, collapsible insulated container of claim 39 wherein each of  
said flaps is folded to lie against one of said sides.
41. (New) The soft-sided, collapsible insulated container of claim 39 wherein:  
two of said flaps are folded to lie against one of said sides; and  
two of said flaps are folded to lie against another of said sides.
42. (New) The soft-sided, collapsible insulated container of claim 2 wherein:  
said liner is formed from a monolithic sheet of liner stock;  
said liner has a base and four sides folded upwardly from said base;  
each of said sides adjoining said base at a folded edge;

each of said sides having a distal edge distant from said base;  
at least of one said distal edges being at a first height relative to said base;  
said liner being capable of holding liquids up to a second height relative to said  
base; said second height being at least one half of said first height; and  
said liner being seamless from said base up to at least said second height.

43. (New) The combination of claim 42 wherein said liner is free of heat welded seams up to said second height.
44. (New) The combination of claim 43 wherein said liner is free of punctures up to said second height.

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### REMARKS

(1) Remarks Concerning Amendments to the Specification

The original specification, Serial No., 09/323,202 filed June 1, 1999, has been typographically amended in several places. Other amendments have been made to improve syntax and grammar and to give consistency between the reference numerals in the text and the numerals shown in the Figures. These amendments correspond to the changes made in the original specification during prosecution. No new subject matter is presented. Enclosed herewith is a substitute specification and a marked-up copy of the original specification showing the changes made to the original specification by the present Amendment.

(2) Remarks Concerning Amendments to the Figures

Figures 1, 2, 4, 5, 6, 9, 12, 13, 14, 15, 18, 24 and 25 in the original application, on file, have been replaced with amended Figures 1, 2, 4, 5, 6, 9, 12, 13, 14, 15, 18, 24

and **25** in order to ensure consistent identification of elements as between the figures and the specification. Additional copies of the sheets of drawings containing the newly amended Figures are enclosed, showing the proposed amendments in red.

In amended Figure **1**, duplicate reference numerals identifying upstanding corner **130** and triangular flap **220** have been deleted. In amended Figure **1**, hook-and-eye fabric fastener strip is identified as **60**, side retainer is identified as **66** and storage strip is identified as **74**, consistent with the specification.

In amended Figure **2**, strip portions **57** and **58**, and corner flap **226** described in the specification, are identified by their respective reference numerals on the drawing.

In amended Figure **4**, rake angle  $\psi$  described in the specification, is identified by the corresponding reference symbol on the drawing.

In amended Figure **5**, corner portion fold lines are designated by reference numerals **350**, **352**, **354**, **356** consistent with the specification. In addition, corner portions **358**, **360**, **362**, and **364**, right trapezoidal side lateral sector **330**, and angles  $\beta$  and  $\phi$ , described in the specification, are identified by their respective reference numerals or symbols on the drawing.

In amended Figure **6**, rear side is designated by reference numeral **376** as provided in the specification.

In amended Figure **9**, reference numeral **78** has been deleted.

In amended Figure **12**, superfluous leader lines to which no reference numerals have been associated, have been deleted.

In amended Figure **13**, distal edges **470**, **472**, **474** and **476** described in the specification, are identified by their respective reference numerals on the drawing.



In amended Figure **14**, partition **425** described in the specification, is identified by its corresponding reference numeral on the drawing.

In amended Figure **15**, end face **522** described in the specification, is identified by its corresponding reference numeral on the drawing.

In amended Figure **18**, inner lip is designated by reference numeral **531** consistent with the specification.

In amended Figure **24**, ring mounting is designated by reference numeral **515** consistent with the specification.

In amended Figure **25**, ring mounting **516** described in the specification, is identified by its corresponding reference numeral on the drawing.

No new subject matter has been introduced by the present Amendment.

(3) Remarks Concerning Amendments to the Claims

Claims 1 – 18 filed in this continuation application correspond to the original claims filed in the parent case, U.S. patent application 09/ 323,202. The present Amendment cancels claims 3 and 5 - 18 which were allowed in the parent case. Claims 1, 2 and 4 were cancelled from the parent case on November 15, 2000 in response to the second (final) Office Action of August 16, 2000. The present Amendment amends claims 1 and 2. Claim 1 is amended to correspond substantially to the claim as amended in the parent case on June 7, 2000 in reply to the first Office Action of January 7, 2000. In addition, the present Amendment adds new claims 19 to 44. New claims 19 to 23 and 32 to 35 correspond substantially to claims 19 to 24, 26, 28 and 29 which were added to the parent case on June 7, 2000 in response to the first Office Action, but

cancelled on November 15, 2000 in a response to the second (final) Office Action. The amendments to the claims do not narrow the scope of the claims.

(a) Prosecution of the Parent Case

In the first Office Action mailed on January 7, 2000 relating to the parent case, the Office Action cited U.S. Patent 2,270,275 to Suciu and U.S. Patent 4,871,069 to Guimont as anticipatory references. More specifically, claims 1, 2, 4 and 5 were rejected under 35 U.S.C. 102(b) as being anticipated by Suciu and claims 1-5 were rejected under 35 U.S.C. 102(b) as being anticipated by Guimont.

In response to the first Office Action, the applicant amended claims 1 and 5, and added new claims 19 to 41.

In the second (final) Office Action mailed on August 16, 2000, claims 1 and 19-24 were rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 4,334,601 to Davis and claims 1 and 19-23 were rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 4,941,603 to Creamer et al.

Claim 26 was rejected under 35 U.S.C. 103(a) as being unpatentable over Davis. Claims 2, 4, 28 and 29 were rejected under 35 U.S.C. 103(a) as being unpatentable over Creamer et al. or Davis in view of Lin.

In addition, claims 24 to 27 were rejected under 35 U.S.C. second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In respect of claims 24 and 25, the Office Action took the position that the "fittings" had not been clearly set forth to permit in the claims to permit one or each of the insulated portions to be maintained in a collapsed position. In regards to claim 27, the Office Action took the position that the functional recitation that the liner is folded from a monolithic sheet was indefinite because it was not supported by recitation in the claim of sufficient structure to accomplish the function.

Claims not specifically mentioned were rejected since they depended from claims rejected under 35 U.S.C. 112, second paragraph.

In response to the second (final) Office Action, the applicant cancelled claims 1, 2, 4, 19 -24, 26, 28 and 29, with traverse, to continue prosecution of those claims in this continuation application. Claims 25 and 27 were amended so as to be in condition for allowance.

(b) 35 U.S.C. 102(b) – Anticipation

Anticipation can only be established by a single prior art reference which discloses each and every element of the claimed invention. *Structural Rubber Products Co., v. Park Rubber Co.*, 749 F.2d 7070; 223 U.S.P.Q. 1264 (C.A.F.C. 1984). The test for anticipation requires that all of the claimed elements must be found in exactly the same situation and united in the same way to perform the same function in a single unit of the prior art. *Studiengesellschaft Kohle, m.b.H. v. Dart Industries, Inc.*, 762 F.2d 724, 726, 220 U.S.P.Q. 841 at 842 (C.A.F.C. 1984).

(i) U.S. Patent 4,334,601 to Davis

(Cited by the Office Action as an anticipatory reference against claims 1 and 19 to 24)

Regarding claim 1 as amended, the applicant respectfully submits that the claim is not anticipated by the Davis reference.

The Davis reference discloses a utility bag 10 having an extensible end compartment **A**, a central insulated compartment **B**, and a second end compartment **C**. End compartment **C** consists of a collapsible compartment of a fixed size. End compartment **A** has a collapsed sleeve member **AS** which can be maintained in a collapsed position or moved to an extended position as shown in Figure 4 and 6 of the specification. The central compartment **B** is described at column 3, lines 41 to 45, as

being: "...a thermally insulated compartment with each and every side thereof and the top **BT** thereof being insulated in a conventional manner such as by polyurethane foam or the like." Central compartment **B** has an interior **BR** in which beverage cans and the like may be placed for the purpose of keeping them cool or hot.

(1) The collapsible compartments of Davis are not insulated

The applicant submits that for the Davis reference to anticipate claim 1 as amended it must clearly show or describe every element of the claimed structure. But, the Davis specification fails to show, disclose, or suggest a first insulated collapsible container portion and a second insulated collapsible container portion. The Davis specification does not show, describe or suggest that compartment **A** is insulated. Compartment **B** is the only compartment described as being thermally insulated. Furthermore, there is no motivation suggested in the Davis specification to provide two insulated container portions having chambers that are maintainable at different environmental conditions. The specification clearly contemplates only one insulated compartment in utility bag 10 (compartment **B**) for carrying beverages or the like. The other compartments (end compartments **A** and **C**) serve a different function which do not require a thermal insulative feature. At column 4, lines 9-17, the Davis specification reads:

"As can be seen from the foregoing specification and drawings, the utility bag of the present invention serves many different functions such as carrying soft drinks in a central compartment **B**, game balls such soccer balls and other athletic equipment or large items in the extensible compartment **A**, and relatively smaller and foldable items such as extra clothing, towels, etc. in the second end compartment **C**."

(2) The insulated compartment of Davis is not collapsible

The applicant also respectfully submits that the Davis reference cannot anticipate claim 1 because it does not disclose, teach or suggest the collapsible feature of the claimed insulated container portion. As previously stated, the only thermally insulated

compartment in utility bag **10** of Davis is compartment **B**. There is nothing in the Davis reference which would tend to indicate or suggest that compartment **B** is collapsible. On the contrary, at column 1, line 53 -54, the brief description of the figures appears to teach away from compartment **B** being collapsible: "Figure **6** is a perspective of the utility bag of the present invention in its most compact configuration". However, looking at Figure **6** purportedly showing the "most compact configuration" of utility bag **10**, compartment **A** is in its collapsed position but compartment **B** is not shown in a collapsed position. The applicant respectfully submits that a person skilled in the art would therefore be led to conclude that compartment **B** is not collapsible. In any case, the reference does not show or suggest that compartment **B** is collapsible. Accordingly, the Davis reference fails to disclose each and every element of the claimed invention.

In light of the foregoing, the applicant respectfully submits that the Davis reference fails to meet the test for anticipation because it does not disclose all the elements of claim 1 in exactly the same situation and united in the same way to perform the same function.

(3) Dependent Claims

Claims 19 to 23 and claim 32 depend from claim 1. Insofar as claim 1 is presently allowable in view of the arguments submitted, the applicant submits that claims 19 to 23 and claim 32 are also allowable.

(ii) U.S. Patent 4,941,603 to Creamer et al.

(Cited by the Office Action as an anticipatory reference against claims 1 and 19 to 23)

Regarding claim 1 as amended, the applicant respectfully submits that the claim is not anticipated by the Creamer et al. reference.

The Creamer et al. reference discloses a dual compartment backpack having a thermally insulated compartment 3 for carrying cold articles within a lower end of the backpack, and an upper compartment 5, located above the thermally insulated compartment 3. The Creamer et al. specification further provides, at column 2, lines 4 - 10, that: "[the] backpack utilizes a housing formed from a combination of semi-flexible, composite, insulated, and waterproof material, as the means to insulate the lower section." Thermally insulated compartment 3 is separated from upper compartment 5 by a thermally insulated barrier. The specification further discloses at column 2, lines 41-43, that: "[w]hen the backpack is not in use, it can be compactly folded up around the insulated and firmer lower section."

(1) Creamer et al. does not teach dual insulated containers

The applicant submits that to anticipate claim 1 the Creamer et al. reference must clearly show or describe every element of the claimed structure. But, the Creamer et al. reference does not show, disclose or suggest a first insulated collapsible container portion and a second insulated collapsible container portion. The specification describes a dual compartment backpack, shown in Figures 1 and 2, in which only one compartment (compartment 3) is thermally insulated. The summary of the invention clearly states at column 2, lines 2 - 4, that in the preferred embodiment, the upper compartment 5 is not insulated. The Creamer et al. reference does not anticipate claim 1 because it does not disclose each and every element of the claimed invention.

(2) Creamer et al. does not teach dual collapsible containers

In the second (final) Office Action mailed August 16, 2000 relating to the parent case, the Office Action took the position that the container of Creamer et al. is considered to be collapsible to the same degree as claimed. The applicant respectfully disagrees with the Office Action's position.

The applicant submits that the Creamer et al. reference does not show, describe, or suggest the collapsible feature of the insulated container portion of claim 1. As previously stated, only compartment 3 of the backpack is thermally insulated. In describing the thermal insulation of compartment 3, the specification provides at column 2, lines 4-10, that: "[the] backpack utilizes a housing formed from a combination of semi-flexible, composite, insulated, and waterproof material, as the means to insulate the lower section." The Creamer et al. specification does not show, describe or suggest that thermally insulated compartment 3 is collapsible. The material used to insulate compartment 3 is described as being semi-flexible, not collapsible. At column 2, lines 41-43, the specification provides that: "[w]hen the backpack is not in use, it can be compactly folded up around the insulated and firmer lower section." From the foregoing passage, it would appear logically inherent that thermally insulated compartment 3 is not collapsible as it is the form of the "firmer lower section" about which the backpack is folded. Accordingly, the Creamer et al. reference fails to anticipate claim 1 because it does not disclose each and every element of the claimed invention.

(3) Dependent Claims

Claims 19 to 23 depend from claim 1. Insofar as claim 1 is presently allowable in view of the arguments submitted, the applicant submits that claims 19 to 23 are also allowable.

(c) 35 U.S.C. 103(a) – Obviousness

Claim 26 of the parent case

In the second (final) Office Action mailed August 16, 2000 relating to the parent case, the Office Action took the position that the Davis reference discloses the claimed invention of claim 26 except for the fittings being hook and eye fasteners instead of a zipper.

Claim 26 of the parent case corresponds substantially to claim 33 of the present continuation application. Claim 33 of the present continuation application has been amended and no longer makes reference to fittings. In any event, in view of the comments provided above in respect of the Davis reference in connection with claim 1, the applicant respectfully submits that claim 33 is not obvious in view of Davis.

Claims 2, 4, 28 and 29 of the parent case

In the second (final) Office Action mailed August 16, 2000 relating to the parent case, the Office Action took the position that the Davis and Creamer et al. references each disclose the claimed device except the insulated container portion having a removable liner. The Office Action further states that the Lin reference discloses that it is known in the art to provide a removable liner in an analogous insulated container. Accordingly, it is the Office Action's view that it would have been obvious to one skilled in the art to provide the insulated container of Davis or Creamer et al. with the removable liner of Lin, in order to provide a preserving space for drinks or fruit.

With respect to claim 4, the Office Action has taken the position that the liner of Lin is considered to be seamless to a depth of at least half the height from the lowest extremity to the upper lip to the same degree as claimed.

Claims 2, 4, 28 and 29 of the parent case correspond, respectively, to claims 2, 4, 34 and 35 of the present continuation case.

In view of the comments provided above in respect of the Davis and Creamer et al. references in connection with claim 1, the applicant respectfully submits that claim 2, 4, 34 and 35 are not obvious in view of Davis or Creamer et al., and Lin.

(d) 35 U.S.C. 112, second paragraph – Indefiniteness

In the second (final) Office Action mailed August 16, 2000 relating to the parent case, claims 24 and 25 were rejected under 35 U.S.C. §112, second paragraph, on the



basis of indefiniteness. The Office Action was of the view that in claims 24 and 25, the structure of the "fittings" had not been clearly set forth to permit one or each of the insulated portions to be maintained in a collapsed position. Claim 26 was also rejected since it depended from rejected claim 24.

Claim 24 and 26 of the parent case correspond substantially to claims 32 and 33 of the present continuation application. However, claims 32 and 33 of the present application have been amended to overcome the rejection under 35 U.S.C. §112, second paragraph.

(4) Conclusion

In view of the foregoing arguments and amendments the applicant submits that the claims are in a condition to permit allowance. Therefore the applicant requests early and favorable disposition of this application.

Should the Examiner believe anything further is desirable in order to place this application in better condition for allowance, the Examiner is requested to contact the undersigned at the telephone number listed below.

In the event this paper is not considered to be timely filed, the applicant respectfully petitions for an appropriate extension of time. Any fees for such an extension, together with any additional fees that may be due with respect to this paper, may be charged to Counsel's Deposit Account No. 01-2300.

Respectfully submitted,



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RLB:ict

Enclosures: Marked-Up Copy of Claims 1 and 2  
Substitute Specification  
Original Specification  
Marked-Up Copy of the Original Specification  
Request for Approval of Drawing Corrections  
Submission of Formal Drawings

**MARKED-UP COPY OF CLAIMS 1 AND 2**

1. (Amended) A [~~soft-sided~~] soft-sided, collapsible, insulated container [~~assembly~~] comprising:

a first collapsible insulated container portion, a second collapsible insulated container portion and a common wall shared between said first and second container portions;

said first container portion having [~~an~~] a first insulated wall structure [~~and~~] defining a first enclosed chamber [~~defined~~] therewithin;

said first insulated wall structure having a first opening defined therein for providing access to said first enclosed chamber, a portion of said first insulated wall structure being moveable to close said first opening;

said second insulated container portion having [~~an~~] a second insulated wall structure [~~and~~] defining a second enclosed chamber [~~defined~~] therewithin;

said common wall segregating said first and second enclosed chambers from each other;

said first chamber being maintainable at a different environmental condition from the environmental condition of said second chamber.

2. (Amended) The [~~soft-sided~~] soft-sided, collapsible, insulated container of claim 1 wherein [~~one of~~] said first insulated container [~~portions~~] portion has a liner for containing liquids mounted within its respective chamber.

**APPLICATION FOR UNITED STATES LETTER PATENT**

**MARKED-UP COPY OF THE ORIGINAL SPECIFICATION**

**TO ALL WHOM IT MAY CONCERN:**

BE IT KNOWN THAT I, Melvin S. Mogil  
of 142 Heddington Avenue, Toronto, Ontario M5N 2K8  
Citizen of Canada, have invented a:

**DIVIDED INSULATED CONTAINER**

of which the following is a specification.

## **DIVIDED INSULATED CONTAINER**

**[001]** This application is a continuation-in-part of U.S. Patent Application 09 / 199,287 filed November 25, 1998.

### **Field of Invention**

5 **[002]** This invention relates to the field of soft sided insulated containers. In particular it relates to soft sided insulated containers having a division between zones to permit different environments to be established in different zones.

### **Background of the Invention**

10 **[003]** In recent times soft sided insulated containers have become popular for carrying either articles that may best be served cool, such as beverages or salads, or warm, such as appetizers, hot dogs, and so on. Such containers are frequently used to carry liquids, whether hot liquids, such as soup containers, coffee or tea, or cold liquids such as beer pop, juices and  
15 milk. The containers are typically made in a generally cube like shape, whether of sides of equal length or not, having a base, four upstanding walls, and a top. The top is generally a lid which opens to permit articles to be placed in, or retrieved from, the container.

20 **[004]** By the nature of their use, it is advantageous for the containers to be water tight. That is, whether to hold melted run-off from ice cubes or to hold spilled liquids, the container must be sufficiently liquid tight that it does not leave a trail of drips, or become moist or sticky to the touch of a person carrying the container.

25 **[005]** The present inventor has found it disadvantageous to try to seal the container itself. Some types of insulating wall are sewn at their seams. Sewn seams have a tendency to leak at the stitches. Another approach is to fold the insulated blanket from which the container is made, to present an assembly that, through folding, has no seams. This is also disadvantageous, in the present inventor's view, because the insulated blanket used to form the

container walls is relatively thick. The thick material may not tend to make a compact fold. It would be preferable to form an impermeable layer that has a relatively thin wall thickness so that the resulting product does not look bulky and cumbersome.

5       **[006]**       It is also advantageous to be able to clean the inside of the insulated container. Spilt liquids may not always have the most attractive air when allowed to dry, and may cause the inside of the container to become unsightly. It is possible to provide a plastic liner for soft sided insulated containers. A see-through plastic liner can be made of the minimum amount  
10       of material by using only a single layer, and forming seams where the edges of the material meet. A common method of forming such a seam is to weld two adjacent edges together by heating. However, an existing liner of this type is known to have had a tendency for the heat welded seams to develop leaks over time. It would be advantageous to reduce or eliminate the number  
15       of heat welded seams formed in areas of the liner that may need to be water tight.

20       **[007]**       In general, manufacture of an assembly of this type emphasizes cost reduction. One common source of cost savings is a reduction of the raw material used. However, the present inventor has observed, counter-intuitively, that the overall benefit an increase in raw material use can outweigh the cost saving that would otherwise be achieved. Unexpectedly, the use of a greater amount of material in a folded assembly has been found to be advantageous, and has eliminated the need to have a heat welding station in manufacture.

25       **[008]**       It may also be that, along with objects to be carried in a leak proof chamber at one temperature, another type of good may also be desired, requiring a different environmental condition. For example, it may be inconvenient for persons going to a picnic to carry a different insulated container for each type of food. They may prefer a single container that  
30       permits more than one type of food to be carried. That is, it may be preferable to have one zone in the insulated container for a cold, or very cold item, such as ice cream, and another zone for cool items, such as fruit or drinks.

Alternatively, one zone may contain canned drinks in ice, while another zone contains warm or hot foods such as pizza or hamburgers. Temperature is not the only determinant factor. For example, while an ice filled zone may be damp inside, other objects, such as bread or some fruits and vegetables, may need a less moist environment.

**[009]** The proportion of the types of objects to be placed in the container may not always be the same. In those situations, it may be advantageous to be able to alter the relative proportions of the volumes of the zones. It may also be advantageous to provide a stabilizer to segregate items, or to discourage items from shifting during transport.

#### Summary of the Invention

**[010]** In an aspect of the invention there is a soft-sided insulated container, and a removable liner for placement inside the container. The liner is folded from a monolithic sheet of liner stock to define a chamber, capable of holding liquids. The liner is free of heat welded seams.

**[011]** In another feature of that aspect of the invention the liner is made from a water impermeable plastic sheet. In an additional feature of that aspect of the invention the liner is made from a translucent static cling vinyl sheet. In another additional feature of that aspect of the invention the soft sided insulated container has a base, sides and a top. The liner has a base, sides for placement inside and adjacent to the base and sides of the container. The top of the container is moveable to an open position to permit articles to be placed in the chamber.

**[012]** In still another additional feature of that aspect of the invention the chamber has an opening, the opening having a lip, and the liner is mated to the cooler about the lip. In yet another additional feature of that aspect of the invention the opening has four sides, the lip extends about the four sides opening and the liner is mated to the container on the four sides. In a further additional feature of that aspect of the invention the liner has a rectangular base and four sides extending from the base, each of the sides having an

edge adjoining the base and a distal edge distant from the base. The chamber has an opening defined between the distal edges of the sides.

**[013]** In a still further additional feature of that aspect of the invention one of the sides has a lid member extending therefrom, the lid member being moveable to close the opening of the liner. In yet another additional feature of that aspect of the invention the lid member is a flap formed integrally with the liner, the flap having four lid edges, one edge being a folded hinge edge adjoining one of the distal edges of the sides, the remaining three lid edges having a closure for mating with the remaining three distal edges.

**[014]** In another aspect of the invention there is a removable liner for placement inside the container. The liner is formed from a water impermeable plastic sheet. The sheet has a periphery. The liner has a quadrilateral base and four sides extending from the base to define a chamber therebetween capable of holding water. Each of the sides are joined to the base at a base edge. Each of the sides has a pair of lateral edges each meeting the base edge at a corner. Each of the sides has an edge opposed to the base edge and meets each of the lateral edges at a corner. The sheet has corner portions defined between adjacent lateral edges of two of the sides and the periphery and the corner positions are folded to lie against the sides.

**[015]** In a further additional feature of that aspect of the invention the base is a rectangle and two of the sides, joined to the base on opposite sides of the rectangle, are trapezoidal. In a still further additional feature of that aspect of the invention the chamber has the shape of an inverted, truncated rectangular based pyramid. In yet another additional feature of that aspect of the invention the container has an internal face made from a reflective material and the liner is transparent.

**[016]** In another aspect of the invention there is a soft sided insulated container, and a removable liner for placement inside the container. The liner is formed from a water impermeable plastic sheet. The sheet has a periphery. The liner has a rectangular base and four sides extending from the base to form a chamber therebetween, each of the sides being joined to the base at a



base edge. The sheet is folded on a first pair of parallel fold lines to define one pair of the base edges. The sheet is folded on a second pair of fold lines to define the remainder of the edges. The sheet has four corner portions each defined between an end portion of one of the first pair of fold lines, an adjacent end portion of one of the second pair of fold lines and the periphery, and the corner portions are folded to lie against the sides.

**[017]** In an additional feature of that aspect of the invention the sides have an inside face and an outside face and the corner portions are folded to lie against the outside faces. In another additional feature of that aspect of the invention each of the corners is folded to form a triangular flap, and each of the flaps is folded to lie against one of the sides. In still another additional feature of that aspect of the invention one of the triangular flaps is folded to lie against each of the sides of the liner. In still yet another additional feature of that aspect of the invention two of the triangular flaps are folded to lie against one side of the liner. In a further additional feature of that aspect of the invention two of the triangular flaps are folded to lie against one side of the liner, and the other two triangular flaps are folded to lie against another side of the liner.

**[018]** In still a further additional feature of that aspect of the invention each of the sides has a distal edge opposed to its respective base edge. The chamber has a lip defined by the distal edges. The corner portions are fastened to the sides adjacent the lip. In still yet a further additional feature of that aspect of the invention one of the sides has a cover flap formed integrally therewith, and joined thereto at a cover fold, the cover flap mating with the distal edges of the remaining sides of the liner. In an additional feature of that aspect of the invention the container has a reflective inner surface and the liner is transparent.

**[019]** In another aspect of the invention, there is a soft sided, collapsible, insulated container assembly. It has a first collapsible insulated container portion, a second collapsible container portion and a common wall shared between said first and second container portions. The first container

portion has an insulated wall structure and a first chamber defined therewithin. The second container portion having an insulated wall structure and a second chamber defined therewithin. The common wall segregates the first and second chambers from each other. The first chamber is maintainable at a different environmental condition from the environmental condition of the second chamber.

**[020]** In an additional feature of that aspect of the invention, one of the insulated container portions has a liner for containing liquids mounted within its respective chamber. In another additional feature, both of the insulated container portions have liners for containing liquids therein. In a further additional feature, the liner has a lowest extremity and an upper lip, and the liner is seamless to a depth of at least half the height from the lowest extremity to the upper lip. In a further additional feature, the liner is removable from its respective chamber. In a still further additional feature, the container has a partition member mounted within the liner. In an additional feature of that additional feature, the partition member includes a stiffening element. In another additional feature of that additional feature, the partition includes a thermally insulative layer for discouraging heat transfer through the partition. In still another additional feature, the liner has a fitting for engaging the partition, and the partition is movable to a plurality of positions in engagement with the fitting. In still yet another additional feature, the respective chamber has a plan form section, the partition is moveable to lie in a horizontal orientation relative to the chamber, and, in that horizontal position, the partition has a shape to match the plan form section.

**[021]** In a further aspect of the invention, there is a soft sided collapsible container assembly. It includes a collapsible insulated wall structure having a chamber defined therewithin. A removable liner is provided for discouraging leakage of liquid from within the chamber. The liner has a lowest extremity and a lip. The liner is seamless to a height at least half way from the lowest extremity to the lip. There is a segregation member for dividing the chamber into at least two sub-compartments.

**[022]** In an additional feature of that aspect of the invention, the segregation member is movable between a plurality of positions within the liner. In another additional feature, the segregation member is movable to at least one substantially vertical position for dividing the chamber into sub-compartments lying horizontally adjacent to the segregation member. In a further additional feature, the segregation member is movable to at least one substantially horizontal position for dividing the chamber into sub-compartments lying above and below the segregation member. In another additional feature, the partition member includes a stiffening element. In still another additional feature, the partition member includes a thermally insulative layer for discouraging heat transfer through the partition member.

#### Brief Description of the Drawings

**[023]** These aspects and other features of the invention can be understood [by] with the aid of the following illustrations of a number of exemplary, and non-limiting, embodiments of the principles of the invention in which:

**[024]** Figure 1 is a three quarter view, general arrangement drawing of an insulated container and liner assembly according to the present invention;

**[025]** Figure 2 is a view of the ~~[liner]~~ assembly of Figure 1 taken on an opposite angle;

**[026]** Figure 3 is a developed view of a liner for use in the assembly of Figure 1;

**[027]** Figure 4 is a developed view of an alternative liner for an assembly analogous to the ~~[liner-of]~~ assembly of Figure 1 in which two sides are tapered;

**[028]** Figure 5 is a developed view of an alternative liner for an assembly analogous to the ~~[liner-of]~~ assembly of Figure 1 in which four sides are tapered;

**[029]** Figure 6 is a developed view of an alternative liner for an assembly analogous to the ~~[liner-of]~~ assembly of Figure 1 in which the forward side of the assembly is wider than the rearward side;

[030] Figure 7 is a front view of the assembly of Figure 1<sub>[7]</sub> in a collapsed position;

[031] Figure 8 is a rear view of the assembly of Figure 1 in a collapsed position;

5 [032] Figure 9 is a side view of the assembly of Figure 1 in a collapsed position;

[033] Figure 10 shows the construction of a wall section of the assembly of Figure 1;

[034] Figure 11 is a view of an alternative liner for the assembly of Figure 1;

10 [035] Figure 12 is an isometric view of an alternative insulated container ~~[and liner]~~ for an assembly similar to that of Figure 1, but being of greater depth;

[036] Figure 13 shows a liner for the insulated container of Figure 12 with an internal divider in a vertical orientation;

15 [037] Figure 14 shows a liner for the insulated container of Figure 12 with an internal divider in a horizontal ~~[configuration]~~ orientation;

[038] Figure 15 shows an isometric view of a further alternative ~~[insulated container]~~ assembly to the ~~[container]~~ assembly of Figure 1;

20 [040] Figure 16 shows an isometric view of the ~~[insulated container]~~ assembly of Figure 15 taken from the diagonally opposite corner;

[041] Figure 17 shows the ~~[container]~~ assembly of Figure 15 with a lid to one chamber open;

[042] Figure 18 shows the ~~[container]~~ assembly of Figure 15 with its opposite chamber open;

25 [043] Figure 19 shows the ~~[container]~~ assembly of Figure 15 with its liners removed;

[044] Figure 20 shows the ~~[container]~~ assembly of Figure 15 in a collapsed position;

30 [045] Figure 21 shows the ~~[container]~~ assembly of Figure 15 in the collapsed position taken from the diagonally opposite corner to Figure 20;

[046] Figure 22 shows a left-hand side elevation of the ~~[container]~~ assembly of Figure 15;

[047] Figure 23 shows a right-hand side elevation of the ~~[container]~~ assembly of Figure 15;

[048] Figure 24 shows a near end view of the [container] assembly of Figure 15;

[049] Figure 25 shows a far end view of the [container] assembly of Figure 15;

5 [050] Figure 26 shows a plan view of the [container] assembly of Figure 15;

[051] Figure 27 shows a right-hand side elevation of the [container] assembly of Figure 20;

[052] Figure 28 shows a left-hand side elevation of the [container] assembly of Figure 20;

10 [053] Figure 29 shows a near end view of the [container] assembly of Figure 20;

[054] Figure 30 shows a far end view of the [container] assembly of Figure 20; and

[055] Figure 31 shows a plan view of the [container] assembly of Figure 20.

#### Detailed Description of a Best Mode for Practicing the Invention

15 [056] The description which follows, and the embodiments described therein, are provided by way of illustration of an example of a particular embodiment, or examples of particular embodiments, of the principles of the present invention. These examples are provided for the purposes of explanation, and not of limitation, of those principles and of the invention. In the description which follows, like parts are marked throughout the specification and the drawings with the same respective reference numerals. The drawings are not necessarily to scale and in some instances proportions may have been exaggerated in order more clearly to depict certain features of the invention.

20 [057] Referring to the general arrangement illustrations of Figures 1 and 2, an example of a preferred embodiment of an insulated container and liner assembly according to the principles of the present invention is indicated generally as 20. It has two major elements, those being an outer casing in the nature of a soft-sided insulated container 22, and a removable, impermeable liner 24 for placement inside container 22. An optional moveable bulkhead, or

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baffle, in the nature of a partition wall **25** seats within liner **24** for dividing the interior space into two sub-compartments **27, 29**.

**[058]** Looking at these major elements in detail, it can be seen that container **22** has a bottom **26**, a front panel **28**, a rear panel **30**, and a pair of left and right hand side panels **32** and **34**. In this preferred embodiment the choice of front and rear, left and right, orientations is arbitrary. Each of front panel **28**, rear panel **30**, and left and right hand side panels **32** and **34** is joined at sewn seams to bottom **26** at bottom vertices **36, 37, 38, or 39** respectively. Similarly, front panel **28** and side panels **32** and **34** have top edges **40, 41** and **42**, distant from their base edges. Rear panel **30** is joined by a folded hinge **44** at its top edge to a top panel in the nature of a lid **46**. Lid **46** has a closure member in the nature of a zipper **48** extending in a U-shape around the three free edge portions of its periphery to mate with the other portions of zipper **48** positioned about the three top edges **40, 41** and **42** of panels **28, 32** and **34**. Lid **46** is moveable between a closed position, in which zipper **48** may be zipped closed, and an open position in which lid **46** is folded back to permit entry and exit of objects to and from an internal cavity **50** defined between bottom **26** and panels **28, 30, 32** and **34**. A generally rectangular insulated auxiliary pouch **52** is mounted to the front face of front panel **28**.

**[059]** In the preferred embodiment, lid **46** has an extent substantially equal to that of bottom panel **26**. This need not be the case. Lid **26** could be a small opening set in a larger top panel, or could be an opening of half, or some other portion of the panel. The opening need not extend fully along three sides of lid **26**, but could extend along part of one or two sides as may be found suitable in a particular use.

**[060]** Top edges **40, 41**, and **42** form the rim **54** of cavity **50**. On the inside of rim **54** is a liner securing means, or liner attachment mounting, in the nature of a zipper **56**, which, in the embodiment illustrated, includes portions **57, 58**, and **59** mounted respectively to panels **28, 32**, and **34** near their upper margins, and a hook and eye fabric fastener strip **60** mounted to panel **30**. Although this arrangement is preferred, in an alternative embodiment all of

strip portions **57, 58, 59** and **60** (or some other combination of them) could be hook-and-eye fabric fasteners. Other types of mounting could be used, in addition to zippers, such as interlocking seal strips, snaps, clips, grommets or other means.

**[061]** Container **22**, with liner **24** installed, can be folded to a collapsed position, as shown in Figures **7, 8** and **9**. In this collapsed, or storage position, side panels **32** and **34** fold inward, and bottom **26** folds upward. This permits front panel **28** to move toward rear panel **30**. Lid **46** is then drawn forward and downward in front of front panel **28** and auxiliary pouch **52**. Lid **46** has, on its inner face, spaced inwardly from zipper **48**, a retainer in the nature of another hook and eye fastener strip **62** that engages a mating hook and eye fastener strip **64** located on a lower portion of the front face of auxiliary pouch **52**. In addition, left and right hand side retainers **66** and **68** mounted to the left and right hand edges of auxiliary pouch **52** of front panel **28** are drawn around to fasten to fastening strips **70** and **72** located on the outer, rearward face of rear panel **30**. (When container **22** is in its open position, ~~strips~~ side retainers **66** and **68** engage storage strips **74** and **76** located on side panels **32** and **34** respectively).

**[062]** Other features of container **22** are visible in Figures **1** and **2**. Front and rear carrying handles **78** and **80** with reinforced bails are attached to both front panel **28** and rear panel **30** to permit two people to carry assembly **20** between them. In the preferred embodiment assembly **20** has a maximum capacity of 24 quarts. Smaller embodiments, include a twelve quart container. A single shoulder strap **79** is attached to side panels **32** and **34**. An elasticized retaining matrix **82** permits other materials, such as cups, plates, serving utensils or other objects to be carried on top of assembly **20**. Above strip **64**, auxiliary pouch **52** has a see-through mesh pocket **84**, such as may be convenient for carrying knives, forks, spoons or other objects.

**[063]** Figure **10** shows a cross section of front panel **28** with liner **24** in place. A scab section of panel **34** is also shown to reveal its layers of construction. With the exception of auxiliary pouch **52**, this section is typical not only of front panel **28** but also, generally, of rear panel **30**, side panels **32**

and 34, bottom [panel] 26 and lid 46. The outer facing layer of front panel 28 is a canvas covering layer 88 for resisting abrasion. It overlays a closed cell foam insulation layer 90. The inner face of insulation layer 90 is covered by flexible plasticised metallic foil sheeting 92 that is shiny and reflective. The material is sold under the name Therma-Flect (T.M.). Liner 24 lies inside sheeting 92, and is pressed against it by the objects it contains. The inside of pouch 52 is lined with white vinyl sheeting, 93 on its forward and bottom sides.

[064] Liner 24<sub>[7]</sub> is shown in Figures 1, 2 and 3. It is made from a membrane, or web, in the nature of a sheet 100 of flexible, transparent plastic stock, in particular, static cling vinyl. The shiny, reflective surface of sheeting 92 is visible through liner 24 in use. Liner 24 has a base 102 and four sides, front, rear, left hand and right hand respectively, 104, 106, 108, and 110 extending upwardly from base 102. Each of sides 104, 106, 108 and 110 is joined to base 102 at a base edge, 112, 114, 116 or 118, as indicated, and each has an opposite, distal edge 120, 122, 124 or 126 distant from its respective base edge. The sides meet at respective upstanding corners 128, 130, 132 and 134. A chamber 136 is defined between base 102 and sides 104, 106, 108 and 110. Chamber 136 has an opening 138 defined by the peripheral lip 140 formed collectively by the distal edges 120, 122, 124 and 126 of sides 104, 106, 108 and 110. Immediately below lip 140 liner support fasteners, in the nature of hook and eye strips, are mounted to sheet 100. This mounting may be by heat welding or by use of a bonding agent or adhesive. In the preferred embodiment lip 140 is folded over to form a hem, and fasteners 141, 144, 143 are of the nature of a continuous zipper around three sides of lip 140, and a fastener 142 in the nature of a fabric hook-and-eye strip are sewn in place with stitching 145 that is at a height relative to base 102 that is expected to be well above the liquid level in liner 24.

[065] In an alternate embodiment, fasteners 141, 142, and 143 are all fabric hook and eye fasteners each mounted on one side of lip 140, and which mate with corresponding hook-and-eye fastener strips mounted to container 22. These fastener strips are commonly sold under the name Velcro (T.M.).



Optional partition **25** is variably positionable. About the upper portion of its periphery it has a strip engaging material **146** that catches on mating strips **147** and **148** located on the inner face of liner **24**. These strips can be hook and eye fastener strips. The range of the strips permits the division of sub compartments **27** and **29** of chamber **136** into equal, half-and half portions, or into some other portions, such as 1/4 to 3/4, 1/3 to 2/3, 2/5 to 3/5 and so forth as may be found desirable given the objects to be contained in chamber **136**.

[066] In Figure 3 sheet **100** is shown in developed view, as it would be before being folded to form liner **24**. A first pair of parallel fold lines **150** and **152** extend across sheet **100**, and a second pair of parallel fold lines **154** and **156**, perpendicular to lines **150** and **152** extend along sheet **100**, thus dividing it into nine portions within the rectangular periphery, **158**, of sheet **100**. It will also be noted that each of lines **150**, **152**, **154** and **156** has two intersections, and is thus divided into a central sector between the parallel lines it intersects, and a pair of end sectors between each of the parallel lines it intersects and the line's termination at periphery **158**.

[067] The central portion of sheet **100**, bounded by the central sector of each of lines **150**, **152**, **154** and **156**, defines base **102**, each of those sectors defining one of base edges **112**, **114**, **116** and **118**. Front side **104** is defined between the central sector **160** of line **150**, two parallel forward end sectors **162** and **164** of lines **154** and **156**, and a mid-edge sector **166** of periphery **158**. Rear side **106** is defined by the central sector **168** of line **152**, two parallel rearward end sectors **170** and **172** of lines **154** and **156**, and a mid edge sector **174** of periphery **158**. Left hand side **108** is defined by central sector **176** of line **154**, two left end sectors **178** and **180** of lines **150** and **152**, and a mid-edge sector **182** of periphery **158**. Right hand side **110** is defined by central sector **184** of line **156**, two right end sectors **186** and **188** of lines **150** and **152**, and a mid-edge sector **190** of periphery **158**.

[068] The remaining four portions of sheet **100** are corner portions **192**, **194**, **196** and **198** defined by a pair of adjacent end sectors of a pair of perpendicular lines, and a corner sector of periphery **158**, indicated respectively as **202**, **204**, **206** and **208**. Corner portions **192**, **194**, **196** and

**198** are bisected by diagonal bisectors **212**, **214**, **216** and **218** which extend from the intersection of the respective perpendicular lines to periphery **158**.

**[069]** Having thus defined the geometry of sheet **100**, liner **24** is formed by folding sides **104**, **106**, **108** and **110** upwardly such that sectors **162** and **178**, **164** and **186**, **170** and **180**, and **172** and ~~**[186]**~~ **188** lie adjacent to each other to form corners **128**, **130**, **132** and **134** respectively. This folding necessitates folding of corner portions **192**, **194**, **196** and **198**, and this is done along their respective diagonal bisectors.

**[070]** When folded along bisectors ~~**[202, 204, 206, and 208]**~~ **212, 214, 216 and 218** corner portions **192**, **194**, **196** and **198** form triangular flaps **220**, **222**, **224** and **226**, as shown in Figures **1** and **2**. In the preferred embodiment flaps **220** and **222** are folded to lie against the outside face of front side **104**, the corner of flap **220** lying most distant from corner **128** overlapping the corner of flap ~~**[204]**~~ **222** lying most distant from corner **130**. Similarly flaps **224** and **226** are folded to lie against the outside face of rear side **106** the most distant corner of flap **224** overlapping the most distant corner of flap **226**. One edge of each flap lies roughly flush with lip **140**, which is folded over and the entire periphery of opening **138** of chamber **136** sewn as a hem **228** having a double row of stitches. In this way liner **24** is formed from sheet **100** such that it is not only free of welded seams, but free of any seams below hem **228** of lip **140**.

**[071]** In the preferred embodiment the folding process is purely mechanical, and can be performed relatively quickly, in contradistinction to heat welding or adhesive bonding processes which require a time interval for heating and cooling or for adhesive curing. Inasmuch as the preferred embodiment uses a relatively thick static cling vinyl, sheet **100** can be folded over a cube form of the desired dimensions, and held in place by its own clinging properties in preparation for the sewing of hem **228**. The overlap of the tips of flaps ~~**[202 and 204, and flaps 206 and 208]**~~ **220 and 222, and flaps 224 and 226**, and subsequent sewing makes it doubly improbable that liner **24** will unfold.

**[072]** Liner **24** is formed from a single integral sheet, and, absent punctures of that sheet, is not intended to leak below the level of the sewn seam at lip **140**. The body of base **102** and sides **104**, **106**, **108** and **110** is seamless, being free of heat welds or other joints. In general use the liquid level in chamber **136** is not expected to be greater than one half of the height of the sides, and still less commonly to be more than three quarters of the height. There are no seams below either of these levels, heat welded or otherwise.

**[073]** Liner **24** is also thin enough that it can be folded inside container **22** when container **22** is compressed to its collapsed position as illustrated in Figures **7**, **8**, and **9**. Liner **24** need not be transparent, but could be translucent or opaque. A transparent liner is preferred since it permits the reflection of sheeting **92** to be seen.

**[074]** In an optional embodiment, a liner **224** can have its own closure, or lid, **230**, to provide a double closure with lid **46** of container **22** in Figure **11**. As shown in Figure **11**, optional lid **230** extends on a folding plastic hinge **232** that is an integral part of sheet **234** from rear side **236** of sheet **234**, and mates at front, left hand and right hand side edges **238**, **240** and **242** along a U-shaped closure interface such as may be held closed by a closure member in the nature of a seal, a zipper, a hook and eye fabric fastener, or a similar device. It is not necessary that the opening of the container, or the liner, form a parallel plane to the respective base or bottom sides. The opening could be in a skewed plane, or could be something other than a plane.

**[075]** In alternative embodiments, one of each of corner flaps **220**, **222**, **224** and **226** can be folded against each of sides **104**, **106**, **108** and **110**, or a pair (**220**, **224**) can be folded against left hand side **108** and another pair (**222**, **226**) against right hand side **110**, rather than against front and rear sides **104** and **106** as illustrated in Figure **11**. It is not necessary that the corner portions have one edge lying flush with lip **146**. However, if the corner portions are cut down, the height at which a liquid tight barrier is provided may not necessarily be as high as shown in the preferred embodiment of Figure **1**. It is also not necessary that corner portions **192**, **194**, **196**, and **198** be folded

against the outside faces of the sides, but could be folded to lie along the inside faces. It would also be possible to fold each flap to lie partially against one side and partially against another side by using more than one fold line and by cutting the periphery of the corner portions differently. There is simplicity in using a single fold and to fold the flaps against the outside of one side of the liner, as shown in the preferred embodiment of Figure 1.

[076] As shown in the developed views of the alternate embodiments of Figures 4, 5, and 6, the liner need not be a cube or cuboid, but could be a tapered, trapezoidal, or truncated pyramidal shape. In the embodiment of Figure 4 a developed sheet 250 has fold lines for forming a liner having a pair of opposed trapezoidal sides 254 and 256 which rise at right angles from a base 258, and a pair of opposed rectangular sides that are folded upward at an angle corresponding to the rake angle  $\psi$  of trapezoidal sides 254 and 256. It can be seen that there is one pair of parallel fold lines 260 and 262, each line having a central sector 264, 266 and a pair of left and right end sectors 268, 270 or 272, 274. There is also a pair of fold line sectors 276 and 278 which define the remaining two sides of base 258 (perpendicular to sectors 264 and 266). The intersections of sectors 276, 264, 278, and 266 define the corners of base 258. Extending away from those corners to periphery 280 are left and right hand canted trapezoidal side sectors 282, 284, 286, and 288 to define the remaining vertices of trapezoidal sides 254 and 256. At the angular bisector of the included angle between adjacent pairs of rectangular side lateral sectors and trapezoidal side sectors, as, for example between sectors 268 and 282, are corner portion fold lines 290, 292, 294, and 296. Corner portions 298, 300, 302 and 304, each defined between one trapezoidal side end sector, one rectangular side end sector and periphery 280, have been trimmed along periphery 280 to lie flush with the resulting lip. When sheet 250 is folded in a manner analogous to the folding of sheet 100, a cradle shaped liner will result, for mating use with a similarly cradle shaped container analogous to container 22.

[077] In the embodiment of Figure 5 a developed sheet 310 has fold lines for forming a liner 312 having a first pair of opposed trapezoidal sides

314 and 316 which rise at a non-perpendicular angle  $\phi$  from a base 318, and a second pair of opposed trapezoidal sides 320, 322 that are folded upward at a rake angle  $\beta$  of the first pair of trapezoidal sides 314 and 316. It can be seen that there is one pair of fold line ~~[sector]~~ sectors 324, 326 ~~[pairs of left and right hand end sectors 328, 330 or 332, 334]~~ and a perpendicular pair of fold line sectors ~~[328 and 330]~~ 336 and 338 which define the remaining two sides of base 318. The intersections of sectors ~~[328]~~ 336, 324, ~~[330]~~ 338, and ~~[336]~~ 326 define the corners of base 318. Extending away from those corners to periphery 340 are left and right hand trapezoidal side lateral sectors ~~[332, 334, 336 and 338]~~ 328, 330, 332 and 334. Similarly, left and right hand canted trapezoidal side sectors 342, 344, 346, and 348 extend from those intersections toward periphery 340 to define the remaining vertices of the trapezoidal sides. At the angular bisector of the included angle between adjacent pairs of rectangular side lateral sectors and trapezoidal side sectors, as, for example between sectors 328 and 342, are corner portion fold lines 350, 352, 354, and 356 of corner portions 358, 360, 362 and 364.

[078] Sectors 332, 334, ~~[336]~~ 328, ~~[338]~~ 330, 342, 344, 346 and 348 all have the same true length, indicated as  $l$ . The distance that sectors 332, 334, 336 and 338 are splayed outward from square is indicated as  $\epsilon$ . The distance that sections 342, 344, 346 and 348 are splayed outward from square is indicated as  $\delta$ . Angle  $\phi$  satisfies the condition that  $\sin \phi = [\epsilon / (l^2 - \delta^2)^{1/2}]$ . Similarly angle  $\beta$  satisfies the condition that  $\sin \beta = [\delta / (l^2 - \epsilon^2)^{1/2}]$ .

[079] When folded in a manner analogous to the folding of sheet 100, sheet 310 will form a truncated, inverted rectangular shaped pyramid. It should be noted that the pairs of opposed slanted pyramid sides need not rise at the same angle, but could be at different angles. In the most general case, each side could rise at a different angle, and to a different height. The upper edges of the sides need not be level, but could have a slant, or, alternatively, need not be linear but could be curved as may suit the desired geometry. However, it is expected that the sides will, most often, have straight and level edges.

[080] In the embodiment of Figure 6, a developed sheet 360 has fold lines for forming a liner 362 having a trapezoidal base 364 such as might be desired in a knapsack having a large rearward face for placement against a person's back, and a narrower outer or forward face. A pair of parallel lines of unequal length, being a short front fold line 366 and a longer rear fold line 368, define the parallel sides of the trapezoidal base 364. A pair of left and right hand side fold lines 370 and 372 extend between lines 366 and 368 at angles to define the splayed sides of trapezoidal base 364. Front side 374, rear side 376, left side 378 and right side 380 are all hinged along respective fold lines 366, 368, 370 and 372 to base 364. Corner portions 382, 384, 386 and 388 are defined between the periphery 390 and respective pairs of side sectors 392 and 394, 396 and 398, 400 and 402, and 404 and 406. Each of portions 382, [392] 384, 386 and 388 has a fold line 408, 410, 412 or 414 on which the respective corner portion is folded, those portions being trimmed along their peripheral edges to lie flush with the peripheral edges of the respective sides against which they are folded, similar to the manner described above in connection with the preferred embodiment.

[081] Referring to the general arrangement illustration of Figure 12 illustrations of Figures 12 and 13, an alternative embodiment of an insulated container and liner assembly is indicated generally as 420. It has two major elements, those being an outer casing in the nature of a soft-sided insulated container 422, and a removable, impermeable liner 424 for placement inside container 422. An optional moveable bulkhead, or baffle, in the nature of an insulated, partition wall 425 seats within liner 424 for dividing the interior space into two chambers, or sub-compartments 427, and 429.

[082] Looking at these major elements in detail, it can be seen that container 422 is of generally similar construction to container 22. Container 422 has a bottom 426, a front panel 428, a rear panel 430, and a pair of left and right hand side panels 432 and 434. Each of front panel 428, rear panel 430, and left and right hand side panels 432 and 434 is joined at sewn seams to bottom 426 at bottom vertices. Rear panel 430 is joined by a folded hinge 436 at its top edge to a top panel in the nature of a lid 438. Lid 438 has a

closure member in the nature of a zipper **440** extending in a U-shape around the three free edge portions of its periphery to mate with the other portions of zipper **440** positioned about the top edges of panels **428**, **432** and **434**. Lid **438** is moveable between a closed position, in which zipper **440** may be zipped closed, and an open position in which lid **438** is folded back to permit entry and exit of objects to and from an internal cavity **442** defined between bottom **426** and panels **428**, **430**, **432** and **434**. A generally rectangular insulated auxiliary pouch **444** is mounted to the front face of front panel **428**.

**[083]** On the inside of rim **446** is a liner securing means, or liner attachment mounting, in the nature of a zipper **448**, which includes portions mounted respectively to panels **428**, **432**, and **434** near their upper margins, and a hook and eye fabric fastener strip **449** mounted to panel **430**. In an alternative embodiment the strip portions (or some other combination of them) could be hook-and-eye fabric fasteners. Other types of mounting could be used, in addition to zippers, such as interlocking seal strips, snaps, clips, grommets or other means.

**[084]** Container **422**, with liner **424** installed, can be folded to a collapsed position in a similar manner to that of container **22**, as shown in Figures **7**, **8** and **9** and described above. Container **422** also has the other feature of container **22** noted above such as shoulder straps, carrying handles, an elasticized retaining matrix, and a see-through mesh pocket. Aside from greater depth, container **422** has the same construction as container **22** described above with reference to Figure **10**.

**[085]** Liner **424**<sub>[7]</sub> is shown in Figures **13** and **14**. It is made from a membrane, or web, in the nature of a sheet **450** of flexible, transparent plastic stock, in particular, static cling vinyl. Liner **424** has a base **462** and four sides, front, rear, left hand and right hand respectively, **454**, **456**, **458**, and **460** extending upwardly from base **462**. Each of sides **454**, **456**, **458** and **460** is joined to base **462** at a base edge, and each has an opposite, distal edge distant from its respective base edge. The sides meet at respective upstanding corners **478**, **480**, **482** and **484**. A chamber **486** is

defined between base **[452] 462** and sides **454, 456, 458** and **460**. Chamber **486** has an opening **488** defined by the peripheral lip **490** formed collectively by the distal edges **470, 472, 474** and **476** of sides **454, 456, 458** and **460**. Immediately below lip **490** liner support fasteners, in the nature of hook and eye strips, are mounted to sheet **450**. This mounting may be by heat welding or by use of a bonding agent or adhesive. Lip **490** is folded over to form a hem, and a continuous zipper around three sides of lip **490**, and a fastener **492** in the nature of a fabric hook-and-eye strip are sewn in place with stitching **494** that is at a height relative to base **[452] 462** that is expected to be well above the liquid level in liner **424**. It will be appreciated that liner **424** could, alternatively, and with appropriate geometric adjustments, be formed in any of the shapes described above in the context of Figures **3, 4, 5** and **6**. It will also be appreciated that liner **424** could be formed in a shape having a lid, as illustrated in Figure **11**.

**[086]** In Figure **13**, partition **425** is shown in a vertical orientation, and, just as in the manner of partition **25**, partition **425** is variably positionable. About the upper portion of its periphery it has a strip engaging material **496** that catches on mating strips **497** and **498** located on the inner face of liner **424**. These strips can be hook and eye fastener strips. The range of the strips permits the division of sub-compartments **427** and **429** of chamber **486** into equal, half-and half zones or portions, or into some other proportion of zones or portions, such as 1/4 to 3/4, 1/3 to 2/3, 2/5 to 3/5 and so forth as may be found desirable given the objects to be contained in chamber **486**.

**[087]** In Figure **14**, liner **424** is shown with partition **425** in a horizontal arrangement. Container **422** and liner **424** have been illustrated as having the same, or roughly the same, width and height, so that partition **425** can be used, as in Figure **13**, to divide chamber **486** into two zones separated by a vertical bulkhead or divider. Alternatively partition **425** can be used to divided chamber **486** into two zones separated by a horizontal, or roughly horizontal, floor or divider, or partition. In the latter case, the materials below the partition, such as cans, bottles or boxes, (not shown) support the partition, and the materials above rest upon the partition. Partition **425** is a relatively



stiff panel, having a stiffener element that is insulated on both planar faces, and encased in a substantially water impermeable, and washable, external skin. The insulation material is a closed cell foam, generally similar to that used in the body of container **422**. The plan form of partition **425** is generally rectangular, with rounded corners, to fit within the projected opening shape of [line] liner **424** in close fitting relationship either in the vertical orientation of Figure **13** or the horizontal configuration of Figure **14**.

**[088]** While partition **425** is water impermeable, its fit within liner **424** is not water-tight. It is, however, a sufficient fit to tend to permit a measure of isolation, or environmental segregation, between the zones on either side of the partition from each other. When partition **425** is oriented to lie generally horizontally it may tend to permit cool materials to be carried in that portion of chamber **486** below partition **425**, and warm or hot materials above. It may also tend to permit wet, or moist materials to be carried below partition **425** and relatively dry materials, such as bread or buns to be carried above. A vertical orientation of partition **425** may also tend to permit segregation into different zones of hot and cool for dry materials. In either orientation, the stiffness of partition **425** may tend to serve to provide softer materials, such as bread or fruit, with some protection from harder materials, such as bottles or cans that might otherwise crush them during the jostling of transportation.

**[089]** Although only one partition **425** is illustrated, it would be possible to provide more than one such partition to permit division of the internal volume of the container into 3, 4 or more sub-compartments. It is also possible to provide a divider, or partition that, in generally horizontal orientation, only covers, or occludes, a portion of the chamber, in the manner of a partial shelf, or set of shelves. Such a partial divider may not tend to provide as effective a thermal barrier as a large partition that more closely matches the plan form of vertical section of the container. Notably, each of partitions **25** and **425**, as illustrated and described, is mounted within its respective liner, **24** or **424**.

[090] ~~[Figure 15 shows]~~ Figures 15 through 31 show an alternative type of soft-sided, insulated wall, collapsible container assembly, indicated generally as **500**. In the foreground of Figure **15** it has a first container portion, indicated generally as **502** and a second container portion, indicated generally as **504**. As illustrated first portion **502** is the same width and height as second portion **504**, but is of lesser length. In the embodiment illustrated this difference is in the ratio of approximately 2:1, but could be greater or lesser, typically in the range of 1:1 to 5:1.

[091] The basic lid, bottom, and sidewall construction of each of the first and second portions is the same as described above in the context of containers **22** and **422**. Each has the general form of six-sided softwalled box, with portions **502** and **504** being joined at a common insulated wall **506** that is silvered on both sides. As with containers **22** and **422**, a pair of left and right hand carrying handles **508** and **510** are provided, being mounted to main sidewall portions **512** and **514** of second portion **504**. The front and rear faces each have a ring mounting ~~[544]~~ 515, **516** to which a carrying strap, such as a shoulder strap, (not shown) can be attached. A top ring fitting **518** is mounted to the lid portion **520** of second portion **504**, and is rooted in the ~~[join]~~ joint between first and second portions **502** and **504**.

[092] End face **522** of first portion **502** has a peripheral strap **524**, and a see through mesh pocket **526** in the manner of pocket **84** described above. A hook and eye fastener strip **528** is mounted laterally to pocket **526** adjacent to, and below its lip to provide an anchoring location for a mating fastener strap **530** mounted to the inner lip ~~[532]~~ 531 of the inside face of lid portion **532** of first portion **502**. First portion **502** also has a pair of storage fastening straps, in the nature of left and right hand side retainers **534** and **536** rooted in the main junction, that extend to engage either fastening strips **538** and **540** (similar to items **70** and **72**, above) when in the collapsed position described above, or storage strips **542** and **544** ( similar to items **74** and **76**) when the cooler is in its expanded position.

[093] Second portion **504** also has a peripheral strap, **550**, side retainers **552** and **554**, and collapsed and open position hook and eye

fastener patches **556**, **558**, **560** and **562**. End face **564** of second portion **504** does not have a lateral strip similar to strip **528**. Instead, the outer end tang **566** of each of retainers **552** and **554** has a hook and eye fabric fastener patch on both inside and outside faces. In that way, when second portion **504** is collapsed, retainers **552** and **554** engage patches **560** and **562**. Then lid portion **520** is drawn downwardly over end face **564** and a fastening strip **570** mounted inside the lip of lid portion **520** engages the outside face patches of tangs ~~[564 and]~~ **566**, and is retained in place by them.

**[094]** Each of portions **502** and **504** is provided with a liner, **572** and **576** respectively, either or both of which can be provided with an insulated partition analogous to partition **425**, as described above in the context of Figures **12**, **13** and **14**. It is not necessary that both portions **502** and **504** have a water-tight liner, since it may be that only one chamber is required for containing a wet object or objects. The double-cooler arrangement illustrated provides a fixed, water-tight barrier between one environment, that prevailing in chamber **580** of first portion **502**, and another environment, that prevailing in chamber **582** of second portion **504**. In the event that partitions are provided, those chamber can themselves be further divided. Although the relative sizes of chambers **580** and **582** are fixed, wall **506** provides a more substantial thermal barrier than the moveable partitions. Further, lid portions **520** and **532** provide separate access to the respective compartments, that is, chambers **580** and **582**. Assembly **500**, like assemblies **20** and **420** provides the combination of a liquid containment barrier for discouraging unwanted escape of liquid, and an environment segregation barrier by which to separate cool and cold, cold and hot, wet and dry, or soft and hard. However, in the former two cases, the physical segregation barrier, that is, partition **25** or **425**, is mounted within the moisture containment barrier, that is either liner **28** or **428**. In the latter instance whether or not there is also a moveable partition provided, the moisture containment barrier lies to one side of the dividing wall, in the nature of common wall **506**.

**[095]** A preferred embodiment has been described in detail and a number of alternatives have been considered. As changes in or additions to

the above described embodiments may be made without departing from the nature, spirit or scope of the invention, the invention is not to be limited by or to those details, but only by the appended claims.

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CLAIMS

I claim:

1. A soft sided, collapsible, insulated container assembly comprising:  
a first collapsible insulated container portion, a second collapsible  
container portion and a common wall shared between said first  
and second container portions;  
said first container portion having an insulated wall structure and a first  
chamber defined therewithin;  
said second container portion having an insulated wall structure and a  
second chamber defined therewithin;  
said common wall segregating said first and second chambers from  
each other;  
said first chamber being maintainable at a different environmental  
condition from the environmental condition of said second  
chamber.
2. The soft sided collapsible container of claim 1 wherein one of said  
insulated container portions has a liner for containing liquids mounted within  
its respective chamber.
3. The soft sided container of claim 2 wherein both of said insulated  
container portions have liners for containing liquids therein.
4. The soft sided collapsible container of claim 2 wherein said liner has a  
lowest extremity and an upper lip, and said liner is seamless to a depth of at  
least half the height from said lowest extremity to said upper lip.
5. The soft-sided container of claim 4 wherein said liner is removable from  
said respective chamber.
6. The soft sided collapsible container of claim 2 wherein said container  
has a partition member mounted within said liner.

7. The soft-sided collapsible container of claim 6 wherein said partition member includes a stiffening element.

8. The soft sided collapsible container of claim 7 wherein said partition includes a thermally insulative layer for discouraging heat transfer through said partition.

9. The soft sided collapsible container of claim 8 wherein the liner has fitting for engaging the partition, said partition being movable to a plurality of positions in engagement with said fittings.

10. The soft sided collapsible container of claim 9 wherein said respective chamber has a plan form section, said partition is moveable to lie in a horizontal orientation relative to said chamber, and, in said horizontal position, said partition has a shape to match said plan form section.

11. A soft sided collapsible container assembly comprising:  
a collapsible insulated wall structure having a chamber defined therewithin;  
a removable liner for discouraging leakage of liquid from within said chamber;  
said liner having a lowest extremity and a lip, said liner being seamless to a height a least half way from said lowest extremity to said lip; and  
a segregation member for dividing said chamber into at least two sub-compartments.

12. The soft-sided, collapsible container of claim 11 wherein said segregation member is movable between a plurality of positions within said liner.

13. The soft-sided, collapsible container of claim 12 wherein said segregation member is movable to at least one substantially vertical position for dividing said chamber into sub compartments lying horizontally adjacent to said segregation member.

14. The soft-sided collapsible container of claim 12 wherein said segregation member is movable to at least one substantially horizontal position for dividing said chamber into sub-compartments lying above and below said segregation member.

15. The soft-sided collapsible container of claim 12 wherein said partition member includes a stiffening element.

16. The soft sided collapsible container of claim 15 wherein said partition includes a thermally insulative layer for discouraging heat transfer through said partition.

17. The soft sided collapsible container of claim 16 wherein the liner has fitting for engaging the partition, said partition being movable to a plurality of positions in engagement with said fittings.

18. The soft sided collapsible container of claim 17 wherein said respective chamber has a plan form section, said partition is moveable to lie in a horizontal orientation relative to said chamber, and, in said horizontal position, said partition has a shape to match said plan form section.

## **DIVIDED INSULATED CONTAINER**

### **Abstract of the Disclosure**

A portable soft sided insulated container has an impermeable liner that provides a liquid holding barrier. The liner is folded from a single monolithic plastic sheet to reduce or eliminate the need for heat welded seams. The liner seats within the container and has a releasable attachment around its lip for mating with the rim of the container. The container has an insulated lid so that the entire assembly may be closed. The liner can be removed for cleaning, or replacement if punctured. When not in use the entire assembly can be folded into a collapsed position for storage. The container has two storage chambers that share a common insulated dividing wall.



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

MELVIN S. MOGIL

Art Unit:

Application No.:

Examiner:

Filed:

Attorney Dkt. No.: 100570-00018

For: DIVIDED INSULATED CONTAINER

**REQUEST FOR APPROVAL OF DRAWING CORRECTIONS**

Commissioner for Patents  
Washington, D.C. 20231

Date: May 18, 2001

Dear Sir:

The Examiner's approval of the drawings corrections to Figs. 1, 2, 4, 5, 6, 9, 12, 13, 14, 15, 18, 24, and 25, shown in red ink on the attached copy, is respectfully requested. These changes were approved in the original application, Serial No. 09/323,202, filed June 1, 1999.

Should any fees be due with respect to this paper, please charge counsel's Deposit Account No. 01-2300.

Respectfully submitted,



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Enclosures: Figs. 1, 2, 4, 5, 6, 9, 12, 13, 14, 15, 18, 24 and 25

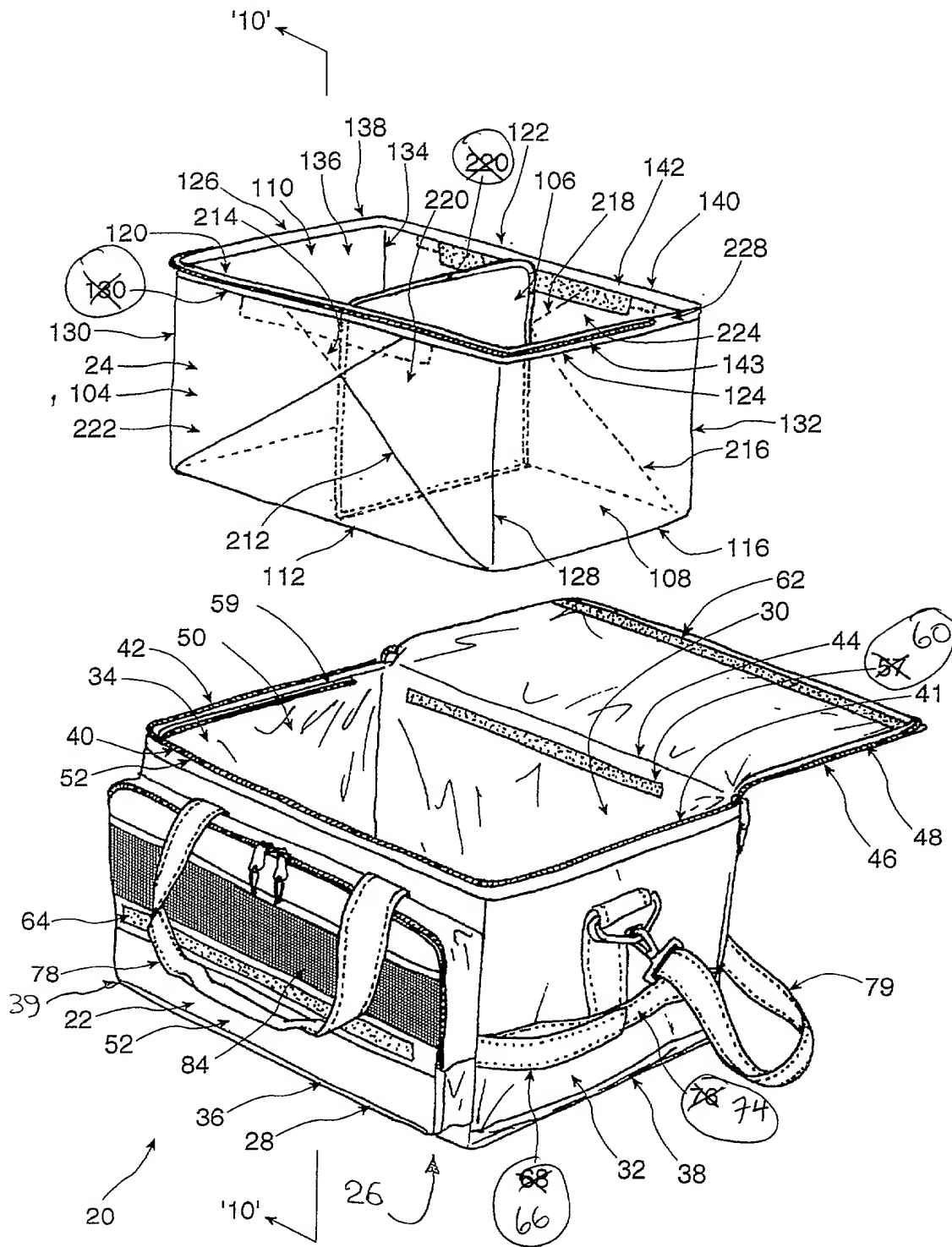


Figure 1

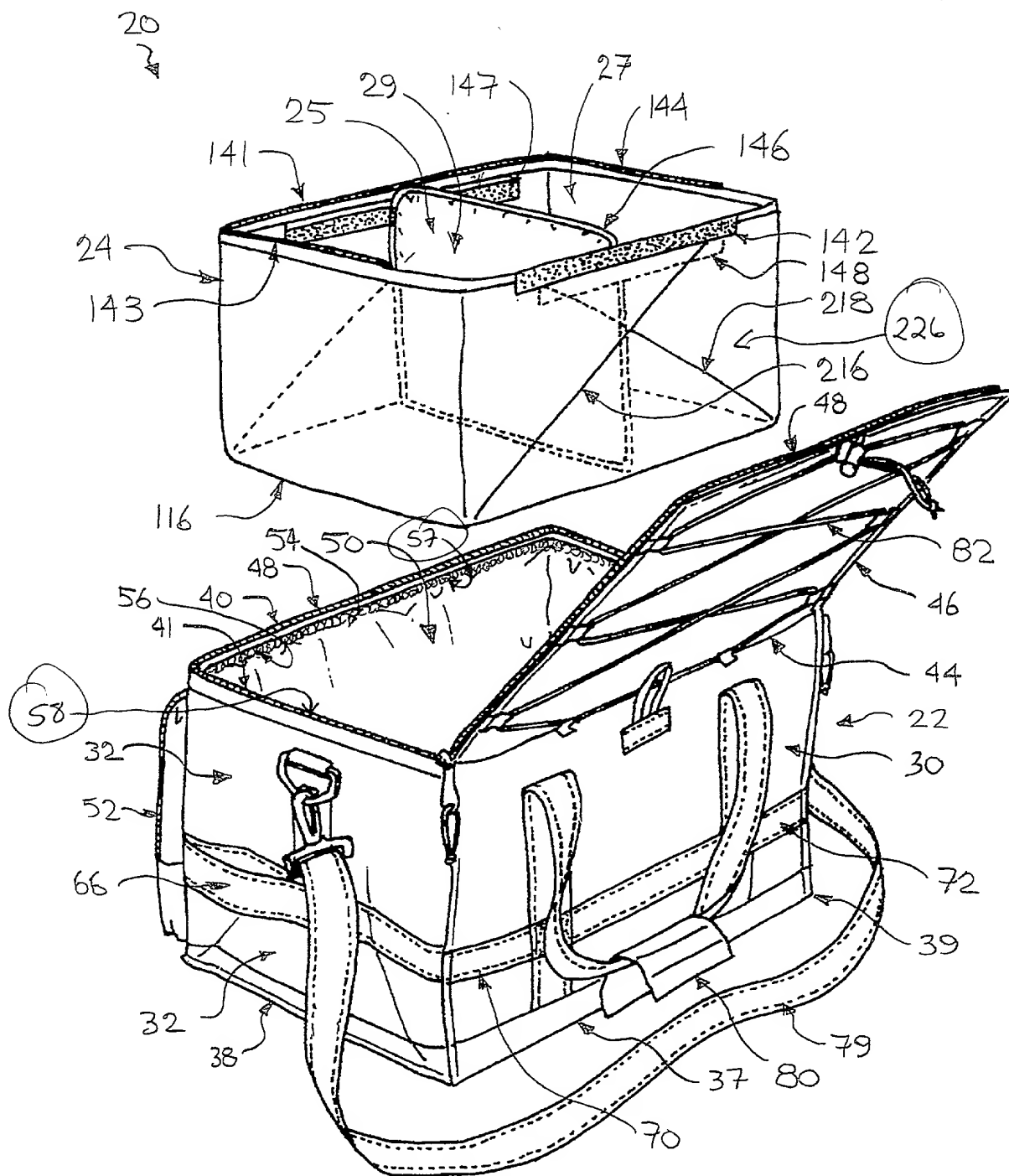
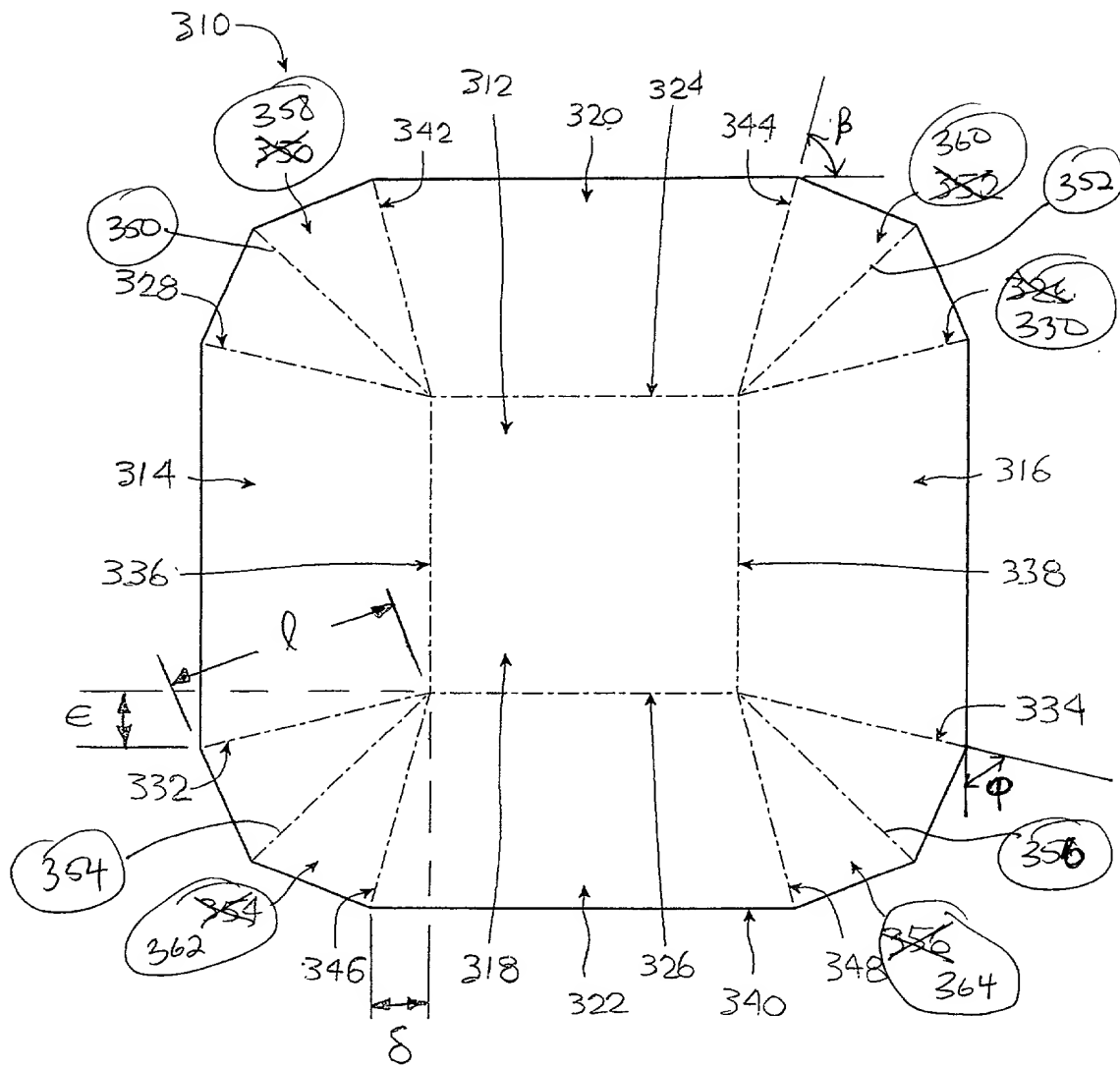
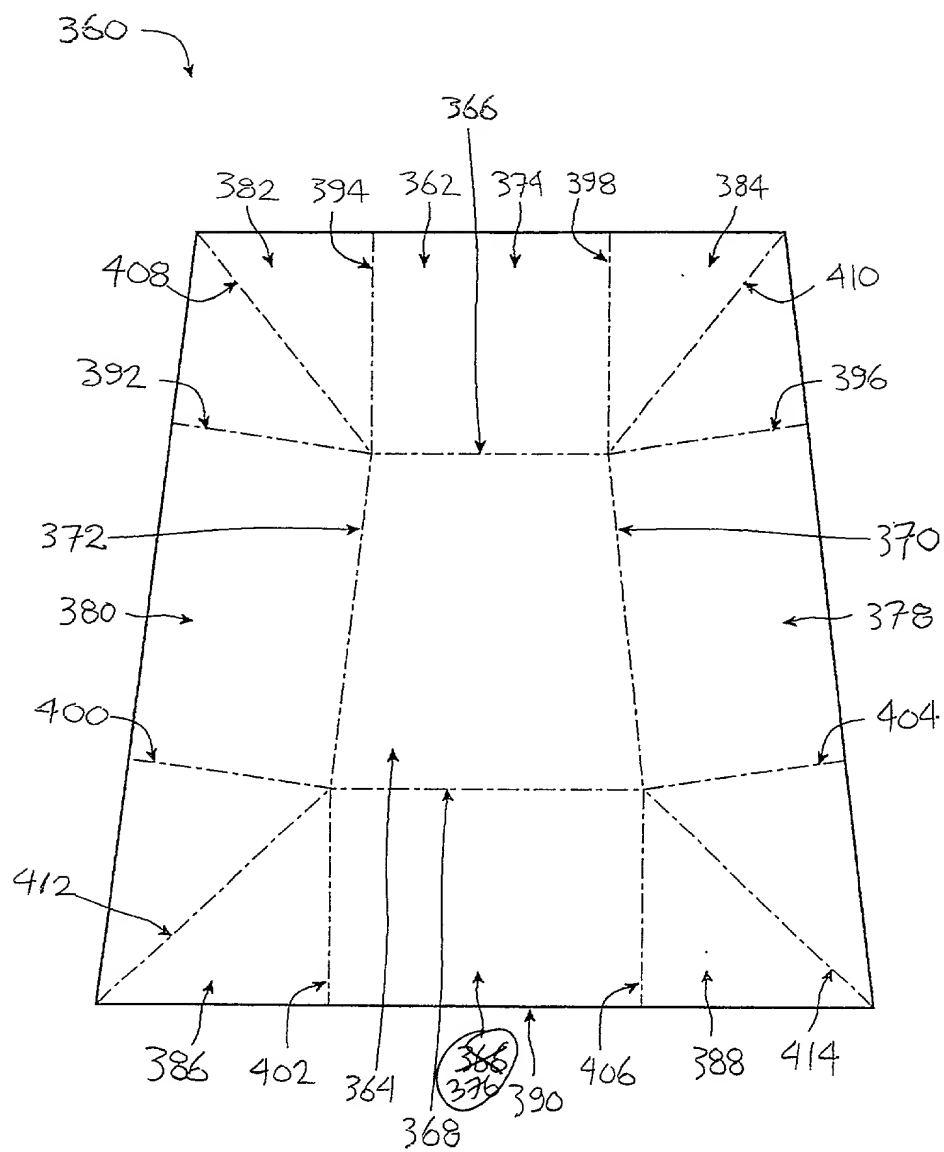


Figure 2

### Figure 4



### Figure 5



**Figure 6**

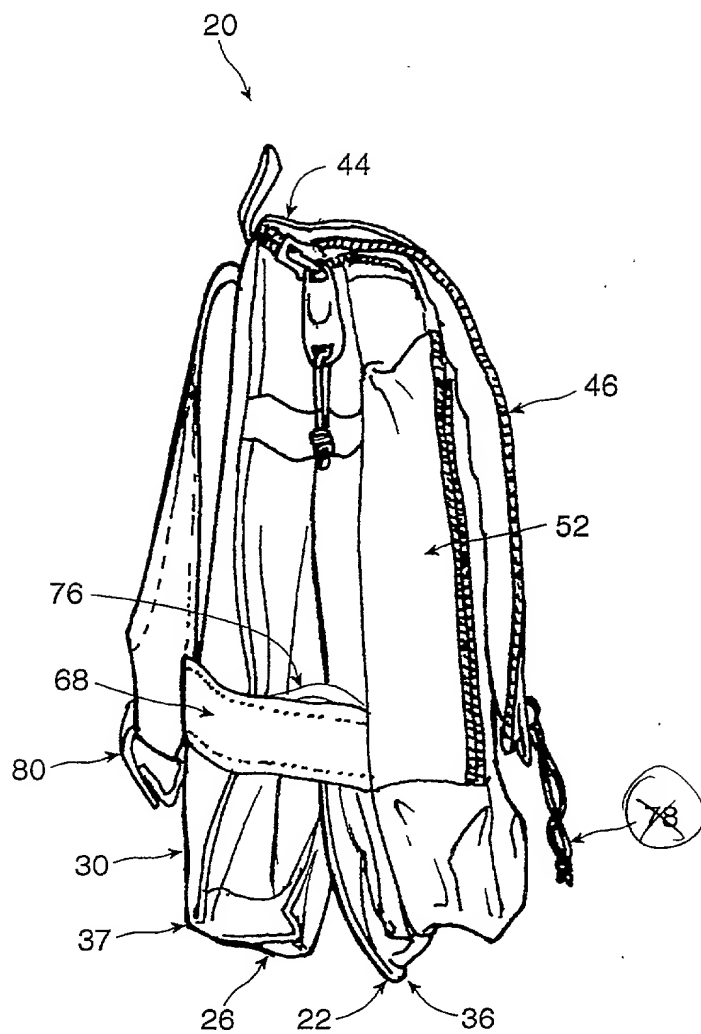


Figure 9

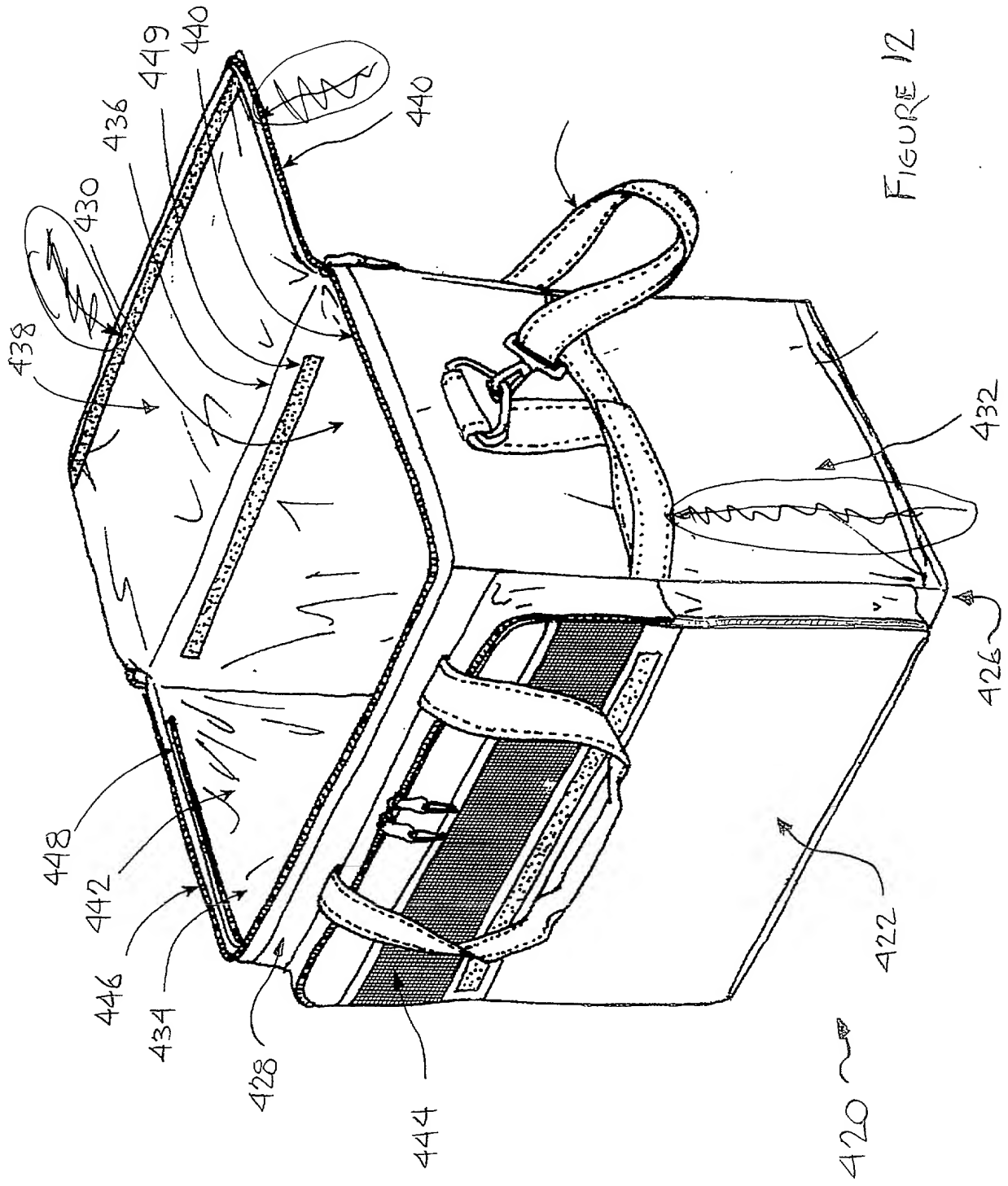


FIGURE 12



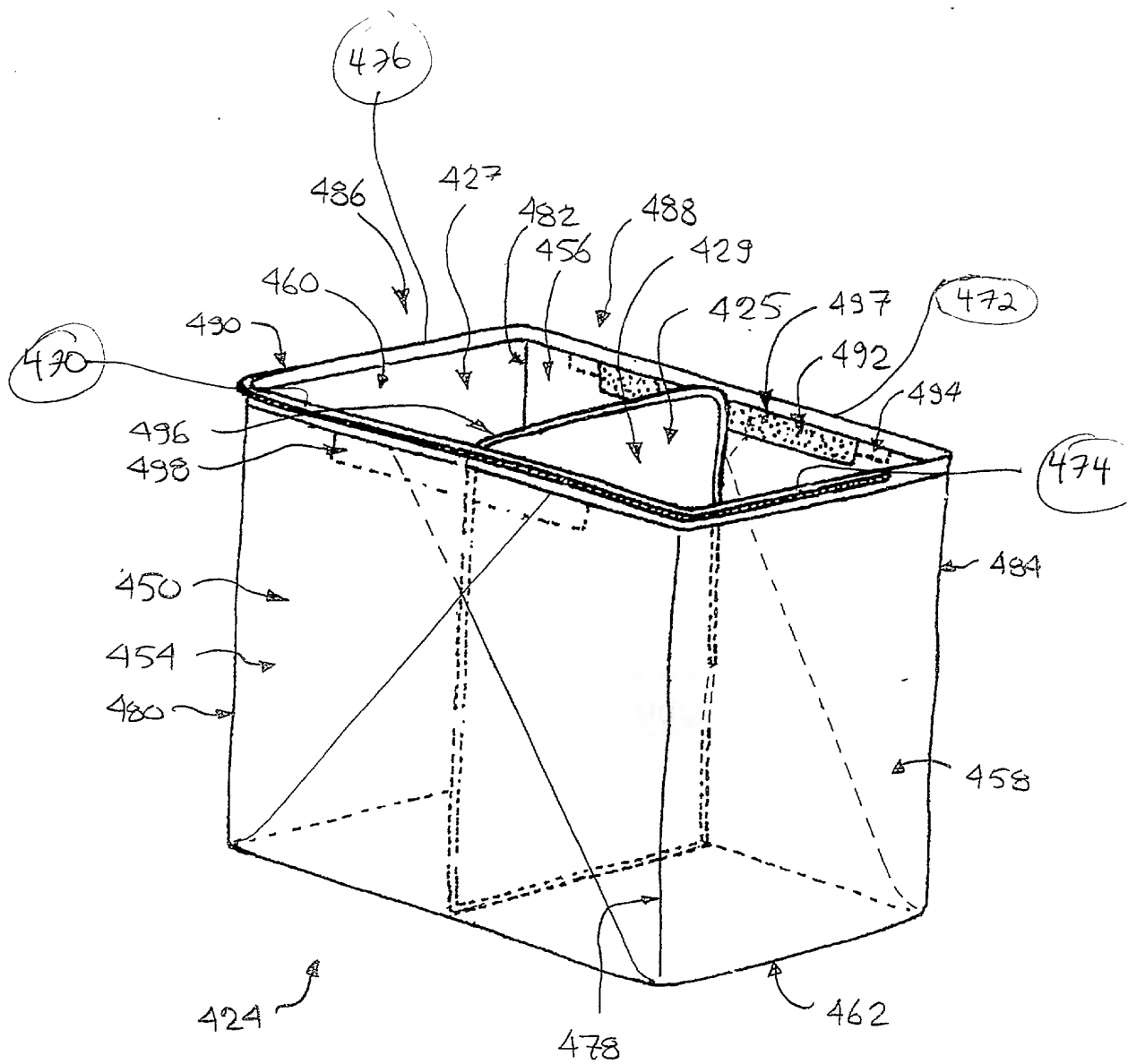


FIGURE 13

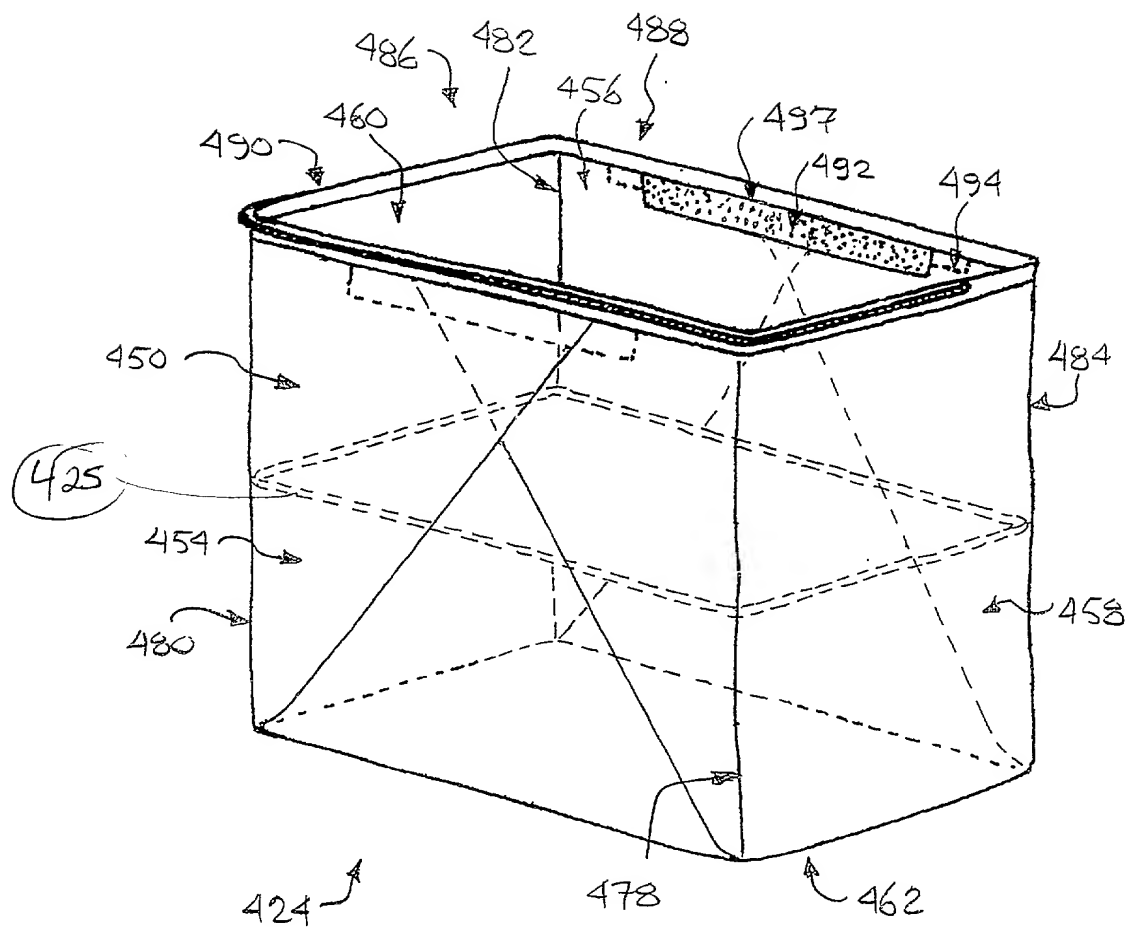


FIGURE 14

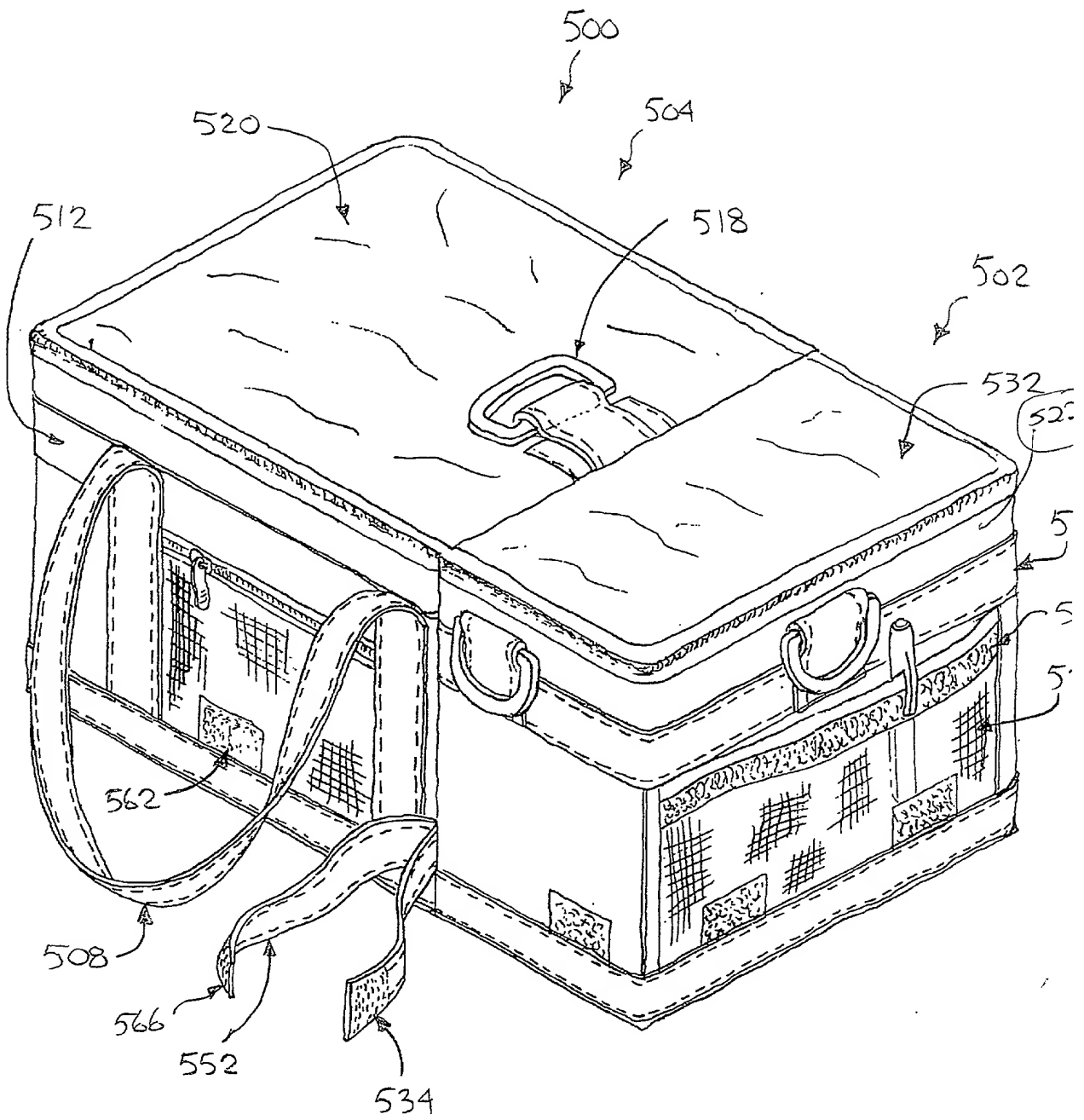


FIGURE 15

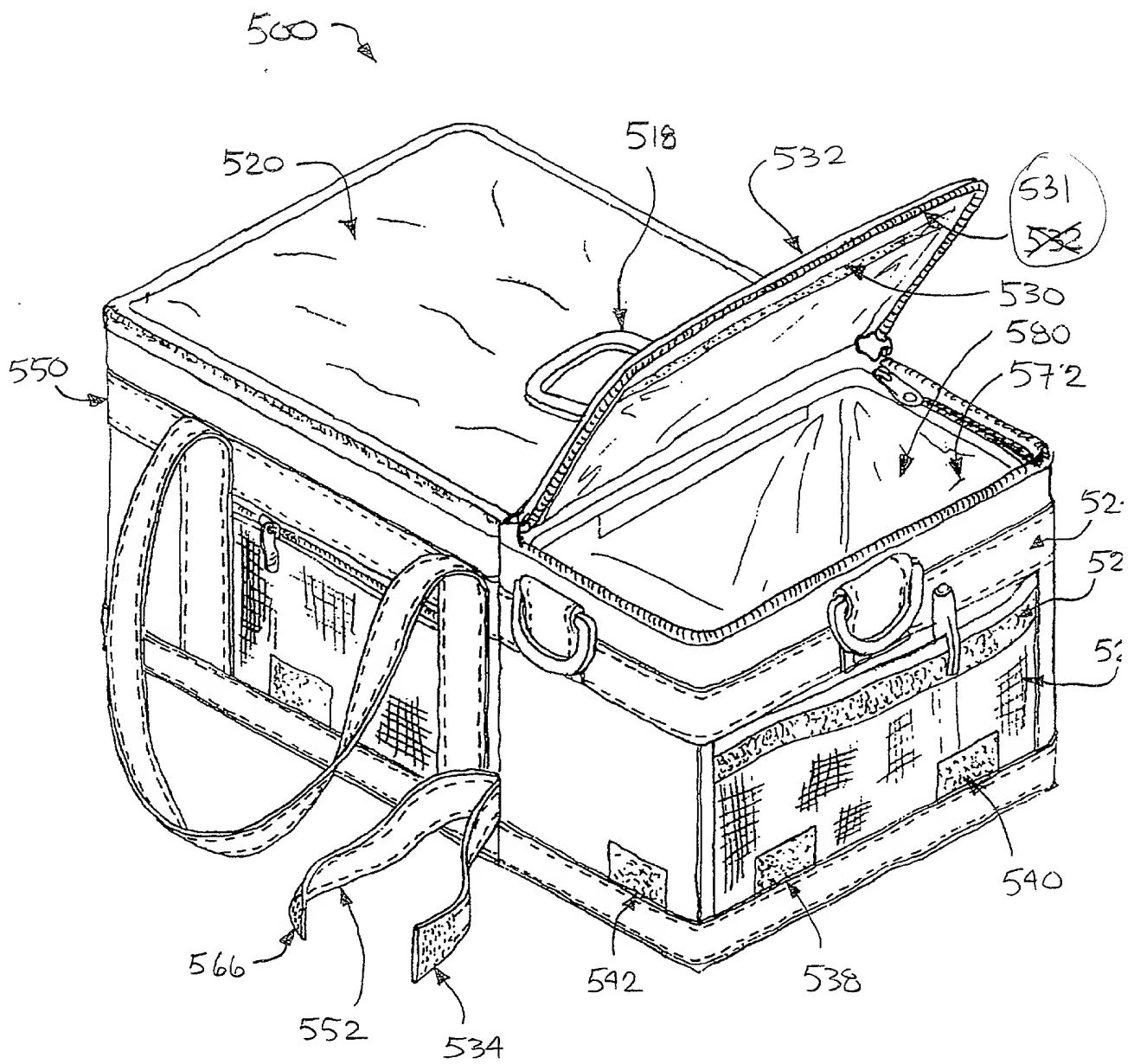


FIGURE 18

500 →

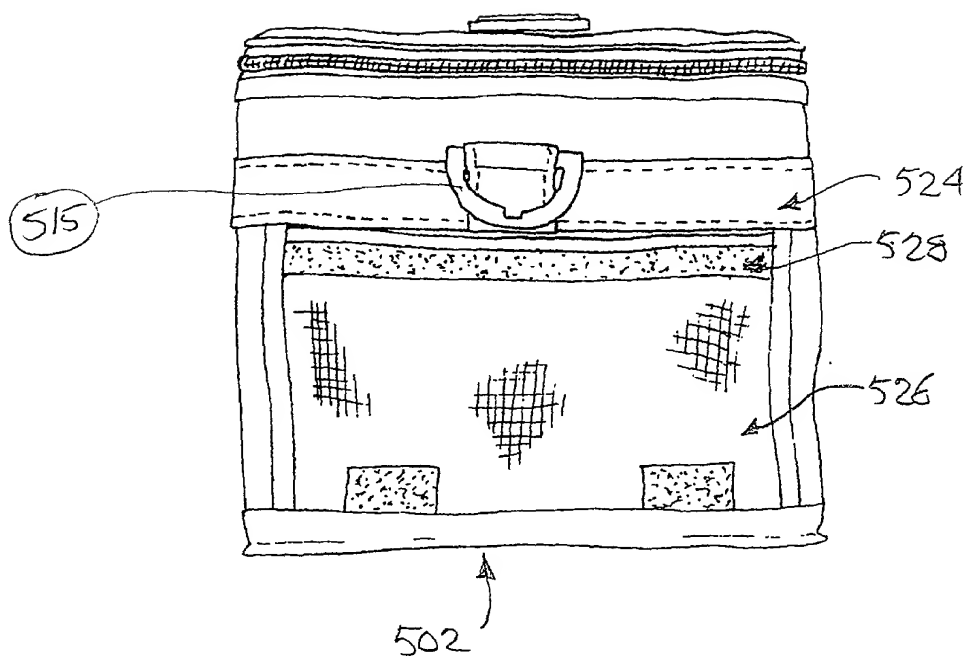


FIGURE 24

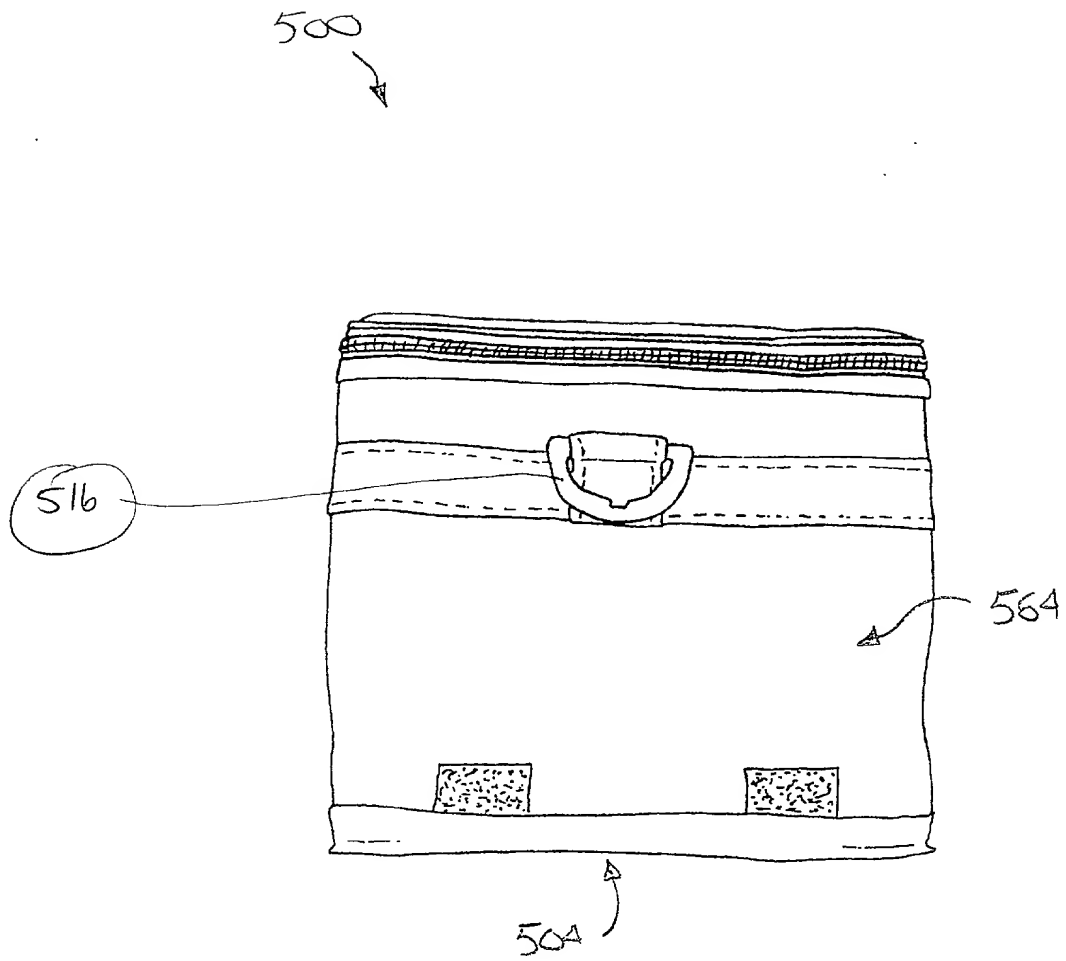


FIGURE 25